



## Sequence Listing

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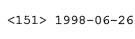


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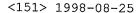
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Phe Leu Tyr Arg Phe Gln Ile Trp Arg Pro Ile Thr Ala Thr Phe 50 55 60

Tyr Phe Pro Val Gly Pro Gly Thr Gly Phe Leu Tyr Leu Val Asn
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Phe Asp Gly Arg Pro Ala Asp Tyr Leu Phe Met Leu Leu Phe Asn 95 100 105



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His L	eu Tyr	Phe	Phe 185	Leu	Met	Phe	Arg	Tyr 190	Pro	Met	Asp	Leu	Gly 195
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Pro S	er Arç	Arg	Gly 215	Gly	Val	Ser	Gly	Phe 220	Gly	Val	Pro	Pro	Ala 225
Ser M	let Arg	Arg	Ala 230	Ala	Asp	Gln	Asn	Gly 235	Gly	Gly	Gly	Arg	His 240
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145



Arg Ile Ile Gln Glu Arg Asn Gly Val Leu Pro Asp Cys Leu Thr Asp Gly Ser Asp Val Val Ser Asp Leu Glu His Glu Glu Met Lys Ile Leu Arg Glu Val Leu Arg Lys Ser Lys Glu Glu Tyr Asp Gln 190 Glu Glu Glu Arg Lys Arg Lys Lys Gln Leu Ser Glu Ala Lys Thr 200 205 Glu Glu Pro Thr Val His Ser Ser Glu Ala Ala Ile Met Asn Asn 220 Ser Gln Gly Asp Gly Glu His Phe Ala His Pro Pro Ser Glu Val 235 Lys Met His Phe Ala Asn Gln Ser Ile Glu Pro Leu Gly Arg Lys Val Glu Arg Ser Glu Thr Ser Ser Leu Pro Gln Lys Gly Leu Lys 265 Ile Pro Gly Leu Glu His Ala Ser Ile Glu Gly Pro Ile Ala Asn Leu Ser Val Leu Gly Thr Glu Glu Leu Arg Gln Arg Glu His Tyr Leu Lys Gln Lys Arg Asp Lys Leu Met Ser Met Arg Lys Asp Met 310 Arg Thr Lys Gln Ile Gln Asn Met Glu Gln Lys Gly Lys Pro Thr 320 325 Gly Glu Val Glu Glu Met Thr Glu Lys Pro Glu Met Thr Ala Glu Glu Lys Gln Thr Leu Leu Lys Arg Arg Leu Leu Ala Glu Lys Leu 355 360 Lys Glu Glu Val Ile Asn Lys

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- <400> 10

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- <400> 11

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<213> Homo sapiens

<400> 14

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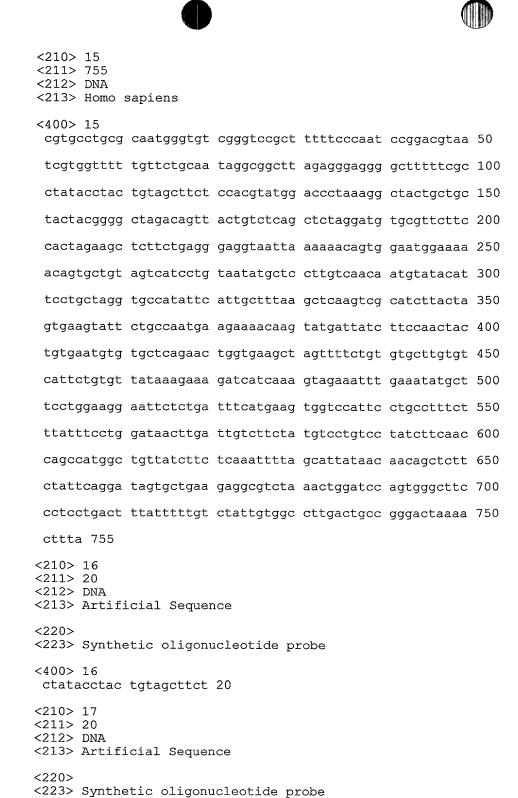
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Phe Ser Asp Phe Met Lys Trp Ser Ile Pro Ala Phe Leu Tyr Phe 95 100 105

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Ala	Gly	Thr	Lys	Thr 170	Leu	Gln	His	Asn	Leu 175	Ala	Gly	Arg	Gly	Phe 180
His	His	Asp	Ala	Phe 185	Phe	Ser	Pro	Ser	Asn 190	Ser	Cys	Leu	Leu	Phe 195
Arg	Ser	Glu	Cys	Pro 200	Arg	Lys	Asp	Asn	Cys 205	Thr	Ala	Lys	Glu	Trp 210
Thr	Phe	Pro	Glu	Ala 215	Lys	Trp	Asn	Thr	Thr 220	Ala	Arg	Val	Phe	Ser 225
His	Ile	Arg	Leu	Gly 230	Met	Gly	His	Val	Leu 235	Ile	Ile	Val	Gln	Cys 240
Phe	Ile	Ser	Ser	Met 245	Ala	Asn	Ile	Tyr	Asn 250	Glu	Lys	Ile	Leu	Lys 255
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Val	Ser	Val	Leu	Val 350	Phe	Asp	Phe	Arg	Pro 355	Ser	Leu	Glu	Phe	Phe 360
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Ser	Lys	Pro	Gln	Val 380	Pro	Glu	Tyr	Ala	Pro 385	Arg	Gln	Glu	Arg	Ile 390
Arg	Asp	Leu	Ser	Gly 395	Asn	Leu	Trp	Glu	Arg 400	Ser	Ser	Gly	Asp	Gly 405
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<211> 2142

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- <211> 458
- <212> PRT
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  35 40 45
- Gly Ser Ser Ser Pro Arg Pro Trp Pro Ser Leu Pro Thr Ser Ser 50 55 60
- Ser Gly Ser Cys Pro Thr Ser His Thr Ala Arg Pro Ile Gly Thr 65 70 75
- Cys Phe Ser Ile Ala Ser Leu Lys Gln Trp Ser Arg Val Ser Met 80 85 90
- Phe Pro Thr Arg Leu Ser Pro Cys Ser Ser Ala Thr Glu Gln Thr 95 100 105



Glu	Arg	Asp	Ser	Ala 110	Thr	Ala	Tyr	Arg	Met 115	Thr	Val	Glu	Val	Leu 120
Gly	Thr	Val	Leu	Gly 125	Thr	Ala	Ile	Gln	Gly 130	Gln	Ile	Val	Gly	Gln 135
Ala	Asp	Thr	Pro	Cys 140	Phe	Gln	Asp	Phe	Asn 145	Ser	Ser	Thr	Val	Ala 150
Ser	Gln	Ser	Ala	Asn 155	His	Thr	His	Gly	Thr 160	Thr	Ser	His	Arg	Glu 165
Thr	Gln	Lys	Ala	Tyr 170	Leu	Leu	Ala	Ala	Gly 175	Val	Ile	Val	Cys	Ile 180
Tyr	Ile	Ile	Cys	Ala 185	Val	Ile	Leu	Ile	Leu 190	Gly	Val	Arg	Glu	Gln 195
Arg	Glu	Pro	Tyr	Glu 200	Ala	Gln	Gln	Ser	Glu 205	Pro	Ile	Ala	Tyr	Phe 210
Arg	Gly	Leu	Arg	Leu 215	Val	Met	Ser	His	Gly 220	Pro	Tyr	Ile	Lys	Leu 225
Ile	Thr	Gly	Phe	Leu 230	Phe	Thr	Ser	Leu	Ala 235	Phe	Met	Leu	Val	Glu 240
Gly	Asn	Phe	Val	Leu 245	Phe	Cys	Thr	Tyr	Thr 250	Leu	Gly	Phe	Arg	Asn 255
Glu	Phe	Gln	Asn	Leu 260	Leu	Leu	Ala	Ile	Met 265	Leu	Ser	Ala	Thr	Leu 270
Thr	Ile	Pro	Ile	Trp 275	Gln	Trp	Phe	Leu	Thr 280	Arg	Phe	Gly	Lys	Lys 285
Thr	Ala	Val	Tyr	Val 290	Gly	Ile	Ser	Ser	Ala 295	Val	Pro	Phe	Leu	Ile 300
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Ala	Val	Ala	Ala	Gly 320	Ile	Ser	Val	Ala	Ala 325	Ala	Phe	Leu	Leu	Pro 330
Trp	Ser	Met	Leu	Pro 335	Asp	Val	Ile	Asp	Asp 340	Phe	His	Leu	Lys	Gln 345
Pro	His	Phe	His	Gly 350	Thr	Glu	Pro	Ile	Phe 355	Phe	Ser	Phe	Tyr	Val 360
Phe	Phe	Thr	Lys	Phe 365	Ala	Ser	Gly	Val	Ser 370	Leu	Gly	Ile	Ser	Thr 375
Leu	Ser	Leu	Asp	Phe 380	Ala	Gly	Tyr	Gln	Thr 385	Arg	Gly	Cys	Ser	Gln 390
Pro	Glu	Arg	Val	Lys 395	Phe	Thr	Leu	Asn	Met 400	Leu	Val	Thr	Met	Ala 405
Pro	Ile	Val	Leu	Ile 410	Leu	Leu	Gly	Leu	Leu 415	Leu	Phe	Lys	Met	Tyr 420



Pro Ile Asp Glu Glu Arg Arg Gln Asn Lys Lys Ala Leu Gln 425 430 435

Ala Leu Arg Asp Glu Ala Ser Ser Ser Gly Cys Ser Glu Thr Asp 440 445 450

Ser Thr Glu Leu Ala Ser Ile Leu 455

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- <211> 571
- <212> DNA
- <213> Homo sapiens
- <400> 21

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- <210> 22
- <211> 1173
- <212> DNA
- <213> Homo sapiens

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- <400> 22
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- <211> 266
- <212> PRT
- <213> Homo sapiens
- <400> 23
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- Val Ile Trp Thr Ser Ala Ala Phe Ile Phe Ser Tyr Ile Thr Ala 20 25 30
- Val Thr Leu His His Ile Asp Pro Ala Leu Pro Tyr Ile Ser Asp 35 40 45
- Thr Gly Thr Val Ala Pro Glu Lys Cys Leu Phe Gly Ala Met Leu
  50 55 60
- Asn Ile Ala Ala Val Leu Cys Ile Ala Thr Ile Tyr Val Arg Tyr 65 70 75
- Lys Gln Val His Ala Leu Ser Pro Glu Glu Asn Val Ile Ile Lys 80 85 90
- Leu Asn Lys Ala Gly Leu Val Leu Gly Ile Leu Ser Cys Leu Gly
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- Leu Ser Ile Val Ala Asn Phe Gln Lys Thr Thr Leu Phe Ala Ala 110 115 120
- His Val Ser Gly Ala Val Leu Thr Phe Gly Met Gly Ser Leu Tyr 125 130 135



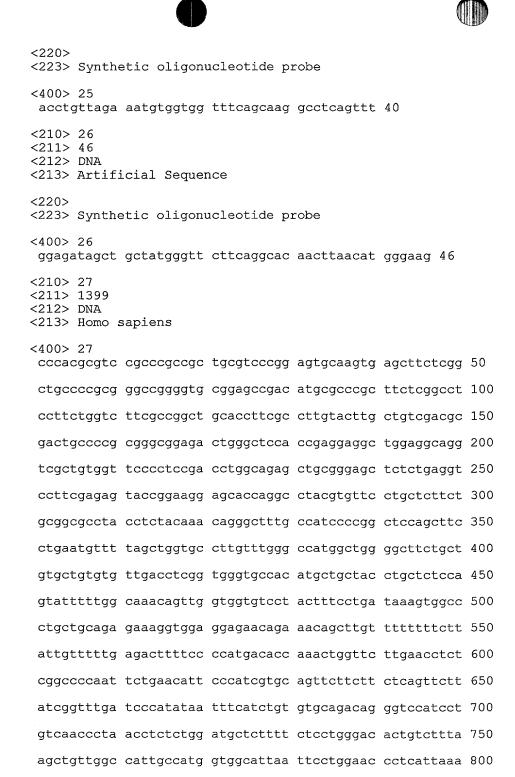
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gcaaggcctc agtttccttc cttcagccct tgtaatttgg acatctgctg 400
ctttcatatt ttcatacatt actgcagtaa cactccacca tatagacccg 450
gctttacctt atatcagtga cactggtaca gtanc 485

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cattgttttt gattgccttc tataggtgat gtggacactg tgcatcaatg 1000



tgcagtgtct tttcagaaag gacactctgc tcttgaaggt gtattacatc 1050 aggttttcaa accagccctg gtgtagcaga cactgcaaca gatgcctcct 1100 agaaaatgct gtttgtggcc gggcgcggtg gctcacgcct gtaatcccag 1150 cactttggga ggccgaggcc ggtgattcac aaggtcagga gttcaagacc 1200 agcctggcca agatggtgaa atcctgtctc taataaaaat acaaaaatta 1250 gccaggcgtg gtggcaggca cctgtaatcc cagctactcg ggaggctgag 1300 gcaggagaat tgcttgaacc aaggtggcag aggttgcagt aagccaagat 1350 cacaccactg cactccagcc tgggtgatag agtgagacac tgtcttgac 1399

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<211> 264

<212> PRT

<213> Homo sapiens

<400> 28

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Phe Ala Leu Tyr Leu Leu Ser Thr Arg Leu Pro Arg Gly Arg Arg 20 25 30

Leu Gly Ser Thr Glu Glu Ala Gly Gly Arg Ser Leu Trp Phe Pro 35 40 45

Ser Asp Leu Ala Glu Leu Arg Glu Leu Ser Glu Val Leu Arg Glu 50 55 60

Tyr Arg Lys Glu His Gln Ala Tyr Val Phe Leu Leu Phe Cys Gly 65 70 75

Ala Tyr Leu Tyr Lys Gln Gly Phe Ala Ile Pro Gly Ser Ser Phe 80 85 90

Leu Asn Val Leu Ala Gly Ala Leu Phe Gly Pro Trp Leu Gly Leu
95 100 105

Leu Leu Cys Cys Val Leu Thr Ser Val Gly Ala Thr Cys Cys Tyr
110 115 120

Leu Leu Ser Ser Ile Phe Gly Lys Gln Leu Val Val Ser Tyr Phe 125 130 135

Pro Asp Lys Val Ala Leu Leu Gln Arg Lys Val Glu Glu Asn Arg 140 145 150

Asn Ser Leu Phe Phe Phe Leu Leu Phe Leu Arg Leu Phe Pro Met
155 160 165

Thr Pro Asn Trp Phe Leu Asn Leu Ser Ala Pro Ile Leu Asn Ile 170 175 180

Pro Ile Val Gln Phe Phe Phe Ser Val Leu Ile Gly Leu Ile Pro 185 190

Tyr Asn Phe Ile Cys Val Gln Thr Gly Ser Ile Leu Ser Thr Leu 200 205 210



Thr Ser Leu Asp Ala Leu Phe Ser Trp Asp Thr Val Phe Lys Leu 215 220 225

Leu Ala Ile Ala Met Val Ala Leu Ile Pro Gly Thr Leu Ile Lys 230 235 240

Lys Phe Ser Gln Lys His Leu Gln Leu Asn Glu Thr Ser Thr Ala  $245 \hspace{1.5cm} 250 \hspace{1.5cm} 255$ 

Asn His Ile His Ser Arg Lys Asp Thr 260

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<211> 1292

<212> DNA

<213> Homo sapiens

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<211> 347

<212> PRT

<213> Homo sapiens

<400> 30

Met Asp Leu Ala Ala Asn Glu Ile Ser Ile Tyr Asp Lys Leu Ser 1 5 10

Glu Thr Val Asp Leu Val Arg Gln Thr Gly His Gln Cys Gly Met 20 25 30

Ser Glu Lys Ala Ile Glu Lys Phe Ile Arg Gln Leu Leu Glu Lys 35 40 45

Asn Glu Pro Gln Arg Pro Pro Pro Gln Tyr Pro Leu Leu Ile Val 50 55 60

Val Tyr Lys Val Leu Ala Thr Leu Gly Leu Ile Leu Leu Thr Ala 65 70 75

Tyr Phe Val Ile Gln Pro Phe Ser Pro Leu Ala Pro Glu Pro Val 80 85 90

Leu Ser Gly Ala His Thr Trp Arg Ser Leu Ile His His Ile Arg 95 100 105

Leu Met Ser Leu Pro Ile Ala Lys Lys Tyr Met Ser Glu Asn Lys 110 115 120

Gly Val Pro Leu His Gly Gly Asp Glu Asp Arg Pro Phe Pro Asp 125 130 135

Phe Asp Pro Trp Trp Thr Asn Asp Cys Glu Gln Asn Glu Ser Glu
140 145 150

Pro Ile Pro Ala Asn Cys Thr Gly Cys Ala Gln Lys His Leu Lys
155 160 165

Val Met Leu Glu Asp Ala Pro Arg Lys Phe Glu Arg Leu His
170 175 180

Pro Leu Val Ile Lys Thr Gly Lys Pro Leu Leu Glu Glu Glu Ile 185 190 195

Gln His Phe Leu Cys Gln Tyr Pro Glu Ala Thr Glu Gly Phe Ser 200 205 210

Glu Gly Phe Phe Ala Lys Trp Trp Arg Cys Phe Pro Glu Arg Trp
215 220 225

Phe Pro Phe Pro Tyr Pro Trp Arg Arg Pro Leu Asn Arg Ser Gln 230 235

Met Leu Arg Glu Leu Phe Pro Val Phe Thr His Leu Pro Phe Pro 245 250 250



Lys Asp Ala Ser Leu Asn Lys Cys Ser Phe Leu His Pro Glu Pro 260 265 270

Val Val Gly Ser Lys Met His Lys Met Pro Asp Leu Phe Ile Ile 275 280 285

Gly Ser Gly Glu Ala Met Leu Gln Leu Ile Pro Pro Phe Gln Cys 290 295 300

Arg Arg His Cys Gln Ser Val Ala Met Pro Ile Glu Pro Gly Asp 305 310 315

Ile Gly Tyr Val Asp Thr Thr His Trp Lys Val Tyr Val Ile Ala 320 325 330

Arg Gly Val Gln Pro Leu Val Ile Cys Asp Gly Thr Ala Phe Ser 335 340 345

Glu Leu

<210> 31

<211> 478

<212> DNA

<213> Homo sapiens

<400> 31

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<210> 32

<211> 3531

<212> DNA

<213> Homo sapiens

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<211> 1003

<212> PRT

<213> Homo sapiens

<400> 33

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Met Ser Gly Phe Trp Asn Ala Cys Tyr Asp Met Leu Met Ser Ser 20 25 30

Gly Gln Arg Arg Gln Trp Glu Arg Ala Gln Ser Arg Arg Ala Phe
35 40 45

Gln Glu Leu Val Leu Glu Pro Ala Gln Arg Arg Ala Arg Leu Glu
50 55 60

Gly Leu Arg Tyr Thr Ala Val Leu Lys Gln Gln Ala Thr Gln His 65 70 75

Ser Met Ala Leu Leu His Trp Gly Ala Leu Trp Arg Gln Leu Ala 80 85 90

Ser Pro Cys Gly Ala Trp Ala Leu Arg Asp Thr Pro Ile Pro Arg 95 100 105

Trp Lys Leu Ser Ser Ala Glu Thr Tyr Ser Arg Met Arg Leu Lys 110 115 120

Leu Val Pro Asn His His Phe Asp Pro His Leu Glu Ala Ser Ala 125 130 135

Leu Arg Asp Asn Leu Gly Glu Val Pro Leu Thr Pro Thr Glu Glu
140 145 150

Ala Ser Leu Pro Leu Ala Val Thr Lys Glu Ala Lys Val Ser Thr 155 160 165

Pro Pro Glu Leu Gln Glu Asp Gln Leu Gly Glu Asp Glu Leu 170 175 180

Ala Glu Leu Glu Thr Pro Met Glu Ala Ala Glu Leu Asp Glu Gln
185 190 195

Arg Glu Lys Leu Val Leu Ser Ala Glu Cys Gln Leu Val Thr Val 200 205 210

Val Ala Val Val Pro Gly Leu Leu Glu Val Thr Thr Gln Asn Val 215 220 225

Tyr Phe Tyr Asp Gly Ser Thr Glu Arg Val Glu Thr Glu Glu Gly 230 235

Ile Gly Tyr Asp Phe Arg Arg Pro Leu Ala Gln Leu Arg Glu Val 245 250 255

His Leu Arg Arg Phe Asn Leu Arg Arg Ser Ala Leu Glu Leu Phe 260 265 270



Phe	Ile	Asp	Gln	Ala 275	Asn	Tyr	Phe	Leu	Asn 280	Phe	Pro	Суз	Lys	Val 285
Gly	Thr	Thr	Pro	Val 290	Ser	Ser	Pro	Ser	Gln 295	Thr	Pro	Arg	Pro	Gln 300
Pro	Gly	Pro	Ile	Pro 305	Pro	His	Thr	Gln	Val 310	Arg	Asn	Gln	Val	Tyr 315
Ser	Trp	Leu	Leu	Arg 320	Leu	Arg	Pro	Pro	Ser 325	Gln	Gly	Tyr	Leu	Ser 330
Ser	Arg	Ser	Pro	Gln 335	Glu	Met	Leu	Arg	Ala 340	Ser	Gly	Leu	Thr	Gln 345
Lys	Trp	Val	Gln	Arg 350	Glu	Ile	Ser	Asn	Phe 355	Glu	Tyr	Leu	Met	Gln 360
Leu	Asn	Thr	Ile	Ala 365	Gly	Arg	Thr	Tyr	Asn 370	Asp	Leu	Ser	Gln	Tyr 375
Pro	Val	Phe	Pro	Trp 380	Val	Leu	Gln	Asp	Tyr 385	Val	Ser	Pro	Thr	Leu 390
Asp	Leu	Ser	Asn	Pro 395	Ala	Val	Phe	Arg	Asp 400	Leu	Ser	Lys	Pro	Ile 405
Gly	Val	Val	Asn	Pro 410	Lys	His	Ala	Gln	Leu 415	Val	Arg	Glu	Lys	Tyr 420
Glu	Ser	Phe	Glu	Asp 425	Pro	Ala	Gly	Thr	Ile 430	Asp	Lys	Phe	His	Tyr 435
Gly	Thr	His	Tyr	Ser 440	Asn	Ala	Ala	Gly	Val 445	Met	His	Tyr	Leu	Ile 450
Arg	Val	Glu	Pro	Phe 455	Thr	Ser	Leu	His	Val 460	Gln	Leu	Gln	Ser	Gly 465
Arg	Phe	Asp	Cys	Ser 470	Asp	Arg	Gln	Phe	His 475	Ser	Val	Ala	Ala	Ala 480
Trp	Gln	Ala	Arg	Leu 485	Glu	Ser	Pro	Ala	Asp 490	Val	Lys	Glu	Leu	Ile 495
Pro	Glu	Phe	Phe	Tyr 500		Pro	Asp	Phe	Leu 505	Glu	Asn	Gln	Asn	Gly 510
Phe	Asp	Leu	Gly	Cys 515		Gln	Leu	Thr	Asn 520	Glu	Lys	Val	Gly	Asp 525
Val	Val	Leu	Pro	Pro 530		Ala	Ser	Ser	Pro 535		Asp	Phe	Ile	Gln 540
Gln	His	Arg	Gln	Ala 545		Glu	Ser	Glu	Tyr 550	Val	Ser	Ala	His	Leu 555
His	Glu	Trp	Ile	Asp 560		Ile	Phe	Gly	Tyr 565		Gln	Arg	Gly	Pro 570
Ala	Ala	Glu	Glu	Ala 575		Asn	Val	Phe	Tyr 580	Tyr	Cys	Thr	Tyr	Glu 585



Gly	Ala	Val	Asp	Leu 590	Asp	His	Val	Thr	Asp 595	Glu	Arg	Glu	Arg	Lys 600
Ala	Leu	Glu	Gly	Ile 605	Ile	Ser	Asn	Phe	Gly 610	Gln	Thr	Pro	Cys	Gln 615
Leu	Leu	Lys	Glu	Pro 620	His	Pro	Thr	Arg	Leu 625	Ser	Ala	Glu	Glu	Ala 630
Ala	His	Arg	Leu	Ala 635	Arg	Leu	Asp	Thr	Asn 640	Ser	Pro	Ser	Ile	Phe 645
Gln	His	Leu	Asp	Glu 650	Leu	Lys	Ala	Phe	Phe 655	Ala	Glu	Val	Thr	Val 660
Ser	Ala	Ser	Gly	Leu 665	Leu	Gly	Thr	His	Ser 670	Trp	Leu	Pro	Tyr	Asp 675
Arg	Asn	Ile	Ser	Asn 680	Tyr	Phe	Ser	Phe	Ser 685	Lys	Asp	Pro	Thr	Met 690
Gly	Ser	His	Lys	Thr 695	Gln	Arg	Leu	Leu	Ser 700	Gly	Pro	Trp	Val	Pro 705
Gly	Ser	Gly	Val	Ser 710	Gly	Gln	Ala	Leu	Ala 715	Val	Ala	Pro	Asp	Gly 720
Lys	Leu	Leu	Phe	Ser 725	Gly	Gly	His	Trp	Asp 730	Gly	Ser	Leu	Arg	Val 735
Thr	Ala	Leu	Pro	Arg 740	Gly	Lys	Leu	Leu	Ser 745	Gln	Leu	Ser	Cys	His 750
Leu	Asp	Val	Val	Thr 755	Cys	Leu	Ala	Leu	Asp 760	Thr	Cys	Gly	Ile	Tyr 765
Leu	Ile	Ser	Gly	Ser 770	Arg	Asp	Thr	Thr	Cys 775	Met	Val	Trp	Arg	Leu 780
Leu	His	Gln	Gly	Gly 785	Leu	Ser	Val	Gly	Leu 790	Ala	Pro	Lys	Pro	Val 795
Gln	Val	Leu	Tyr	Gly 800	His	Gly	Ala	Ala	Val 805	Ser	Суз	Val	Ala	Ile 810
Ser	Thr	Glu	Leu	Asp 815	Met	Ala	Val	Ser	Gly 820	Ser	Glu	Asp	Gly	Thr 825
Val	Ile	Ile	His	Thr 830	Val	Arg	Arg	Gly	Gln 835	Phe	Val	Ala	Ala	Leu 840
Arg	Pro	Leu	Gly	Ala 845	Thr	Phe	Pro	Gly	Pro 850	Ile	Phe	His	Leu	Ala 855
Leu	Gly	Ser	Glu	Gly 860	Gln	Ile	Val	Val	Gln 865	Ser	Ser	Ala	Trp	Glu 870
Arg	Pro	Gly	Ala	Gln 875	Val	Thr	Tyr	Ser	Leu 880	His	Leu	Tyr	Ser	Val 885
Asn	Gly	Lys	Leu	Arg 890	Ala	Ser	Leu	Pro	Leu 895	Ala	Glu	Gln	Pro	Thr 900



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Cys Ala Leu His Ile Leu Gln Leu Asn Thr Leu Leu Pro Ala Ala
Pro Pro Leu Pro Met Lys Val Ala Ile Arg Ser Val Ala Val Thr
                935
                                    940
Lys Glu Arg Ser His Val Leu Val Gly Leu Glu Asp Gly Lys Leu
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950 955

Ile Val Val Ala Gly Gln Pro Ser Glu Val Arg Ser Ser Gln 965 970

Phe Ala Arg Lys Leu Trp Arg Ser Ser Arg Arg Ile Ser Gln Val 985

Ser Ser Gly Glu Thr Glu Tyr Asn Pro Thr Glu Ala Arg 995 1000

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eggectggg taaagacttt aagagecee aceteaacta thactggetg 750 cecateatga cetecateet gggggectat gteategeaa geggettett 800 cagegttte ggeatgtgg tggacacget etteetege tteetggaag 850 acetggageg gaacaacgge tecetggace ggeetacta catgtecaag 900 ageettetta agattetggg caagaagaac gaggegeee eggacaacaa 950 gaagaggaag aagtgacage teceggeeegg atecaggee etecatea etecaggace ggacaacaa 950 cecacegtee ageeateeaa eeteacteg eeteacta geaceeeace 1000 eecacegtee ageeateeaa eeteacteg eeteactge etecatttg 1050 tggtaaaaaa aggtttagg eeaggegeeg tggeteacge etgtaateea 1100 acaetttgag aggetgagge gggeggatea eetgagteag gagttegaga 1150 eeageetgge eaacatggtg aaaceetegt etecagetae tegggagget 1250 gaggeaggag aategettga aeeegggagg eagaggttge agtgageega 1300 gategegeea etgeacteea aeetgggtga eagaetetgt etecaaaaca 1350 aaacaaacaa acaaaaagat tttattaaag atattttgtt aacte 1395

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<211> 321

<212> PRT

<213> Homo sapiens

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Pro Gly Leu Met Cys Val Phe Gln Gly Tyr Ser Ser Lys Gly Leu
35 40 45

Ile Gln Arg Ser Val Phe Asn Leu Gln Ile Tyr Gly Val Leu Gly
50 55 60

Leu Phe Trp Thr Leu Asn Trp Val Leu Ala Leu Gly Gln Cys Val
65 70 75

Leu Ala Gly Ala Phe Ala Ser Phe Tyr Trp Ala Phe His Lys Pro 80 85 90

Gln Asp Ile Pro Thr Phe Pro Leu Ile Ser Ala Phe Ile Arg Thr 95 100

Leu Arg Tyr His Thr Gly Ser Leu Ala Phe Gly Ala Leu Ile Leu 110 115 120

Thr Leu Val Gln Ile Ala Arg Val Ile Leu Glu Tyr Ile Asp His
125 130 135



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Lys Leu Arg Gly Val Gln Asn Pro Val Ala Arg Cys Ile Met Cys
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 Cys Phe Lys Cys Cys Leu Trp Cys Leu Glu Lys Phe Ile Lys Phe
 Leu Asn Arg Asn Ala Tyr Ile Met Ile Ala Ile Tyr Gly Lys Asn
 Phe Cys Val Ser Ala Lys Asn Ala Phe Met Leu Leu Met Arg Asn
                 185
                                     190
 Ile Val Arg Val Val Leu Asp Lys Val Thr Asp Leu Leu Leu
                                     205
 Phe Phe Gly Lys Leu Leu Val Val Gly Val Gly Val Leu Ser
                 215
 Phe Phe Phe Ser Gly Arg Ile Pro Gly Leu Gly Lys Asp Phe
                 230
 Lys Ser Pro His Leu Asn Tyr Tyr Trp Leu Pro Ile Met Thr Ser
                                     250
 Ile Leu Gly Ala Tyr Val Ile Ala Ser Gly Phe Phe Ser Val Phe
 Gly Met Cys Val Asp Thr Leu Phe Leu Cys Phe Leu Glu Asp Leu
                 275
 Glu Arg Asn Asn Gly Ser Leu Asp Arg Pro Tyr Tyr Met Ser Lys
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 Ser Leu Leu Lys Ile Leu Gly Lys Lys Asn Glu Ala Pro Pro Asp
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 Asn Lys Lys Arg Lys Lys
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43

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<212> DNA

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gccaccatgt ctttgatgga gagccccgag aaggatggct cagggacaga 1250 tcacttcatc caggctctgg acagcctctc caggagtaac ctggacaagc 1300 tgtaccatgg cctggaactc gccaagaagc agctgcgagc cacccagcag 1350 accattgcca gctgc 1365

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Ser Gln Arg Val Leu Leu Phe Val Ala Ser Asp Val Asp Ala Leu 20 25 30

Cys Ala Cys Lys Ile Leu Gln Ala Leu Phe Gln Cys Asp His Val 35 40 45

Gln Tyr Thr Leu Val Pro Val Ser Gly Trp Gln Glu Leu Glu Thr 50 55 60

Ala Phe Leu Glu His Lys Glu Gln Phe His Tyr Phe Ile Leu Ile 65 70 75

Asn Cys Gly Ala Asn Val Asp Leu Leu Asp Ile Leu Gln Pro Asp 80 85 90

Glu Asp Thr Ile Phe Phe Val Cys Asp Ser His Arg Pro Val Asn 95 100 105

Val Val Asn Val Tyr Asn Asp Thr Gln Ile Lys Leu Leu Ile Lys 110 115 120

Gln Asp Asp Asp Leu Glu Val Pro Ala Tyr Glu Asp Ile Phe Arg 125 130 135

Asp Glu Glu Glu Asp Glu Glu His Ser Gly Asn Asp Ser Asp Gly 140 145 150

Ser Glu Pro Ser Glu Lys Arg Thr Arg Leu Glu Glu Glu Ile Val 155 160 165

Glu Gln Thr Met Arg Arg Gln Arg Arg Glu Trp Glu Ala Arg 170 175 180

Arg Arg Asp Ile Leu Phe Asp Tyr Glu Gln Tyr Glu Tyr His Gly 185 190 195

Thr Ser Ser Ala Met Val Met Phe Glu Leu Ala Trp Met Leu Ser 200 205 210

Lys Asp Leu Asn Asp Met Leu Trp Trp Ala Ile Val Gly Leu Thr 215 220

Asp Gln Trp Val Gln Asp Lys Ile Thr Gln Met Lys Tyr Val Thr 230 235 240

Asp Val Gly Val Leu Gln Arg His Val Ser Arg His Asn His Arg



				245					250					255
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Ser	Phe	Glu	Tyr	Asp 275	Leu	Arg	Leu	Val	Leu 280	Tyr	Gln	His	Trp	Ser 285
Leu	His	Asp	Ser	Leu 290	Cys	Asn	Thr	Ser	Tyr 295	Thr	Ala	Ala	Arg	Phe 300
Lys	Leu	Trp	Ser	Val 305	His	Gly	Gln	Lys	Arg 310	Leu	Gln	Glu	Phe	Leu 315
Ala	Asp	Met	Gly	Leu 320	Pro	Leu	Lys	Gln	Val 325	Lys	Gln	Lys	Phe	Gln 330
Ala	Met	Asp	Ile	Ser 335	Leu	Lys	Glu	Asn	Leu 340	Arg	Glu	Met	Ile	Glu 345
Glu	Ser	Ala	Asn	Lys 350	Phe	Gly	Met	Lys	Asp 355	Met	Arg	Val	Gln	Thr 360
Phe	Ser	Ile	His	Phe 365	Gly	Phe	Lys	His	Lys 370	Phe	Leu	Ala	Ser	Asp 375
Val	Val	Phe	Ala	Thr 380	Met	Ser	Leu	Met	Glu 385	Ser	Pro	Glu	Lys	Asp 390
Gly	Ser	Gly	Thr	Asp 395	His	Phe	Ile	Gln	Ala 400	Leu	Asp	Ser	Leu	Ser 405
Arg	Ser	Asn	Leu	Asp 410	Lys	Leu	Tyr	His	Gly 415	Leu	Glu	Leu	Ala	Lys 420
Lys	Gln	Leu	Arg	Ala 425	Thr	Gln	Gln	Thr	Ile 430	Ala	Ser	Cys	Leu	Cys 435
Thr	Asn	Leu	Val	Ile 440	Ser	Gln	Gly	Pro	Phe 445	Leu	Tyr	Cys	Ser	Leu 450
Met	Glu	Gly	Thr	Pro 455	Asp	Val	Met	Leu	Phe 460	Ser	Arg	Pro	Ala	Ser 465
Leu	Ser	Leu	Leu	Ser 470	Lys	His	Leu	Leu	Lys 475	Ser	Phe	Val	Суз	Ser 480
Thr	Lys	Asn	Arg	Arg 485	Cys	Lys	Leu	Leu	Pro 490	Leu	Val	Met	Ala	Ala 495
Pro	Leu	Ser	Met	Glu 500	His	Gly	Thr	Val	Thr 505	Val	Val	Gly	Ile	Pro 510
Pro	Glu	Thr	Asp	Ser 515	Ser	Asp	Arg	Lys	Asn 520	Phe	Phe	Gly	Arg	Ala 525
Phe	Glu	Lys	Ala	Ala 530	Glu	Ser	Thr	Ser	Ser 535	Arg	Met	Leu	His	Asn 540
His	Phe	Asp	Leu	Ser 545	Val	Ile	Glu	Leu	Lys 550	Ala	Glu	Asp	Arg	Ser 555
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560 565

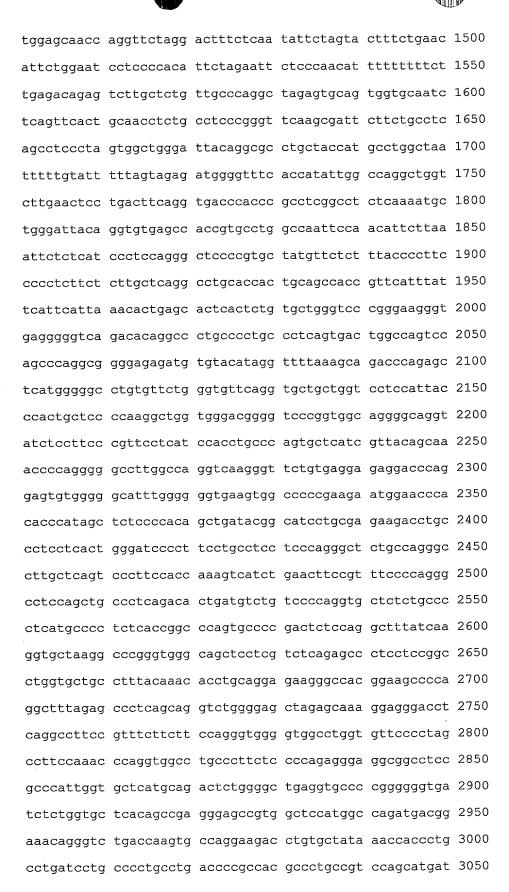
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 ctcttcgtgg cctcggangt ggatgctctg tgtgcgtgca agatccttca 150
 ggccttgttc cagtgtgacc angtgcaata tangctggtt ccagtttctg 200
 ggtggcaaga acttgaaact gcatttcttg agcataaaga acagtttcat 250
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<213> Homo sapiens

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<221> Clq Domain Proteins
<222> 144-178, 78-111, 84-117
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Phe Leu Leu Met Cys Glu Ile Arg Met Val Glu Leu Thr Phe Asp
Arg Ala Val Ala Ser Gly Cys Gln Arg Cys Cys Asp Ser Glu Asp
Pro Leu Asp Pro Ala His Val Ser Ser Ala Ser Ser Ser Gly Arg
Pro His Ala Leu Pro Glu Ile Arg Pro Tyr Ile Asn Ile Thr Ile
 Leu Lys Gly Asp Lys Gly Asp Pro Gly Pro Met Gly Leu Pro Gly
 Tyr Met Gly Arg Glu Gly Pro Gln Gly Glu Pro Gly Pro Gln Gly
 Ser Lys Gly Asp Lys Gly Glu Met Gly Ser Pro Gly Ala Pro Cys
 Gln Lys Arg Phe Phe Ala Phe Ser Val Gly Arg Lys Thr Ala Leu
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140

Ala Pro Leu Arg Gly Ile Tyr Phe Phe Ser Leu Asn Val His Ser 175

Val Asn Leu Asp Gly Cys Phe Asp Met Ala Thr Gly Gln Phe Ala

His Ser Gly Glu Asp Phe Gln Thr Leu Leu Phe Glu Arg Val Phe

Trp Asn Tyr Lys Glu Thr Tyr Val His Ile Met His Asn Gln Lys

Glu Ala Val Ile Leu Tyr Ala Gln Pro Ser Glu Arg Ser Ile Met

40

115

130



200	205	210

Gln Ser Gln Ser Val Met Leu Asp Leu Ala Tyr Gly Asp Arg Val 215 220 225

Trp Val Arg Leu Phe Lys Arg Gln Arg Glu Asn Ala Ile Tyr Ser 230 235 240

Asn Asp Phe Asp Thr Tyr Ile Thr Phe Ser Gly His Leu Ile Lys 245 250 255

Ala Glu Asp Asp

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- <210> 51
- <211> 2768
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- <213> Homo sapiens
- <400> 51
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- ccgcctcccg ggacagaaga tgtgctccag ggtccctctg ctgctgccgc 150
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- tgccagtgca gccagccaca gacagtcttc tgcactgccc gccaggggac 250



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Val Pro Arg Asp Val Pro Pro Asp Thr Val Gly Leu Tyr Val Phe 50 55 60

Glu Asn Gly Ile Thr Met Leu Asp Ala Gly Ser Phe Ala Gly Leu 65 70 75

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Glu	Gly	Asn	Leu	Pro 575	Leu	Leu	Ile	Ala	Pro 580	Ala	Leu	Ala	Ala	Val 585
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Arg	Gly	Arg	Ala	Met 605	Ala	Ala	Ala	Ala	Gln 610	Asp	Lys	Gly	Gln	Val 615
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Val Leu Ile Leu Cys His Asn Arg Ile Gl<br/>n Gl<br/>n Leu Asp Leu Lys 80  $\,$ 85  $\,$ 90



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Cys Pro Pro Leu Gly Leu Glu Thr Leu Lys Ile Thr Asp Phe Gln 140 145 150

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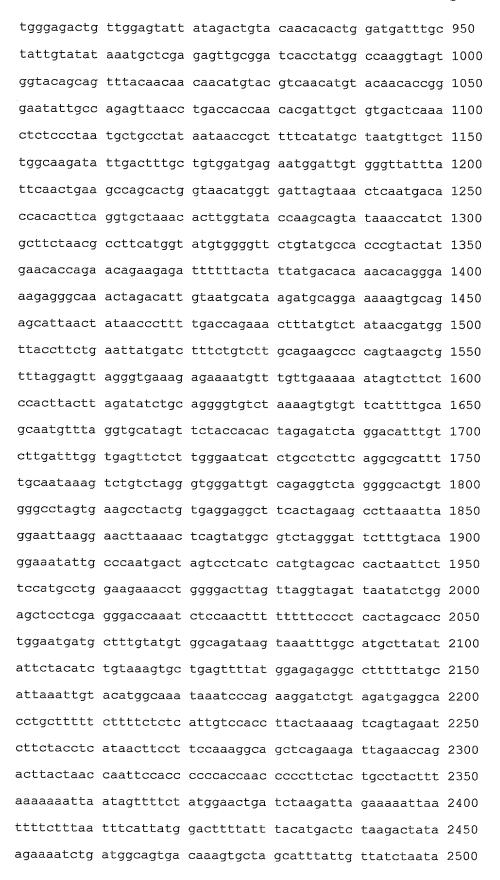


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Phe Ser Ser Ser Ser Arg Ser Gly Ser Ser Ser Ser Arg Ser Leu
50 55 60

Gly Ser Gly Gly Ser Val Ser Gln Leu Phe Ser Asn Phe Thr Gly
65 70 75

Ser Val Asp Asp Arg Gly Thr Cys Gln Cys Ser Val Ser Leu Pro 80 90

Asp Thr Thr Phe Pro Val Asp Arg Val Glu Arg Leu Glu Phe Thr 95 100 105

Ala His Val Leu Ser Gln Lys Phe Glu Lys Glu Leu Ser Lys Val 110 115 120

Arg Glu Tyr Val Glń Leu Ile Ser Val Tyr Glu Lys Lys Leu Leu 125 130 135

Asn Leu Thr Val Arg Ile Asp Ile Met Glu Lys Asp Thr Ile Ser 140 145

Tyr Thr Glu Leu Asp Phe Glu Leu Ile Lys Val Glu Val Lys Glu
155 160 165

Met Glu Lys Leu Val Ile Gln Leu Lys Glu Ser Phe Gly Gly Ser 170 175

Ser Glu Ile Val Asp Gln Leu Glu Val Glu Ile Arg Asn Met Thr 185 190 195

Leu Leu Val Glu Lys Leu Glu Thr Leu Asp Lys Asn Asn Val Leu 200 205 210

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Ser	Asp	Gly	Ser	Leu 365	Glu	Asp	Gly	Asp	Asp 370	Val	His	Arg	Ala	Val 375
Asp	Asn	Glu	Arg	Asp 380	Gly	Val	Thr	Tyr	Ser 385	Tyr	Ser	Phe	Phe	His 390
Phe	Met	Leu	Phe	Leu 395	Ala	Ser	Leu	Tyr	Ile 400	Met	Met	Thr	Leu	Thr 405
Asn	Trp	Ser	Arg	Tyr 410	Glu	Pro	Ser	Arg	Glu 415	Met	Lys	Ser	Gln	Trp 420
Thr	Ala	Val	Trp	Val 425	Lys	Ile	Ser	Ser	Ser 430	Trp	Ile	Gly	Ile	Val 435
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<212> DNA

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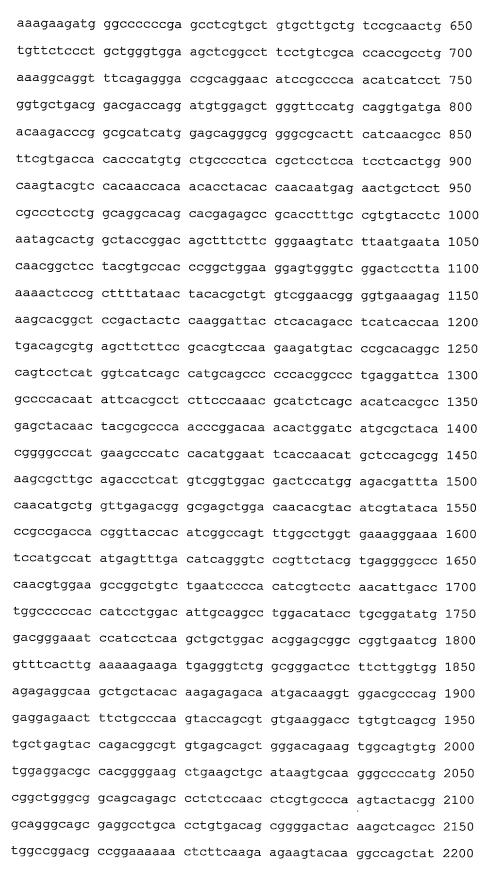
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gtcaacatgc tcctctgc 18
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<212> PRT

<213> Homo sapiens

<400> 84

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Ile Ile Leu Val Leu Thr Asp Asp Gln Asp Val Glu Leu Gly Ser 50 55 60

Met Gln Val Met Asn Lys Thr Arg Arg Ile Met Glu Gln Gly Gly 65 70 75

Ala His Phe Ile Asn Ala Phe Val Thr Thr Pro Met Cys Cys Pro 80 85 90

Ser Arg Ser Ser Ile Leu Thr Gly Lys Tyr Val His Asn His Asn 95 100 105

Thr Tyr Thr Asn Asn Glu Asn Cys Ser Ser Pro Ser Trp Gln Ala 110 115 120

Gln His Glu Ser Arg Thr Phe Ala Val Tyr Leu Asn Ser Thr Gly
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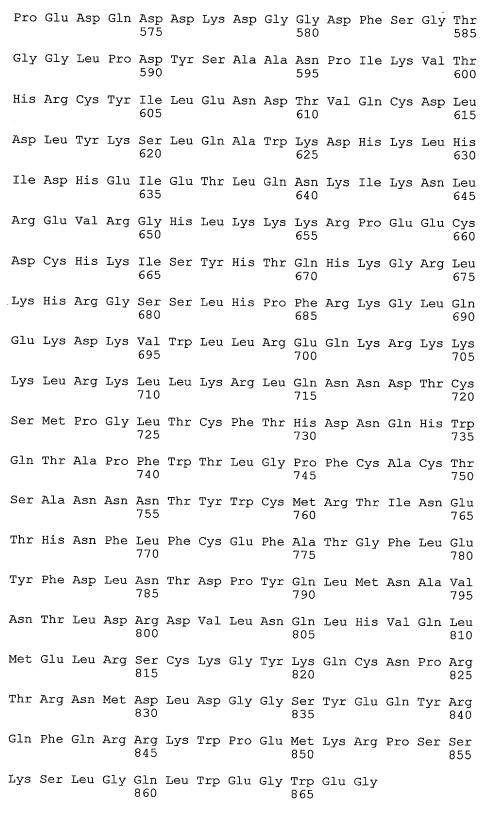
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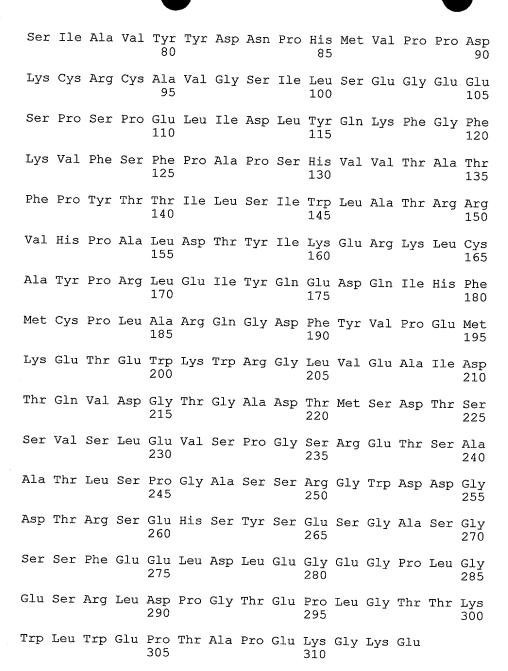
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His Ile His Tyr Thr Gly Ser Leu Val Asp Gly Arg Ile Ile Asp 65 70 .75

Thr Ser Leu Thr Arg Asp Pro Leu Val Ile Glu Leu Gly Gln Lys 80 85 90

Gln Val Ile Pro Gly Leu Glu Gln Ser Leu Leu Asp Met Cys Val 95 100 105

Gly Glu Lys Arg Arg Ala Ile Ile Pro Ser His Leu Ala Tyr Gly
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Lys Leu Val Lys Gly Ile Leu Pro Leu Val Gly Met Ala Met Val 155 160 165

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Ala Lys Glu Lys Asp Ile Val Tyr Pro Gly Ile Ala Val Phe Phe 125 130 135

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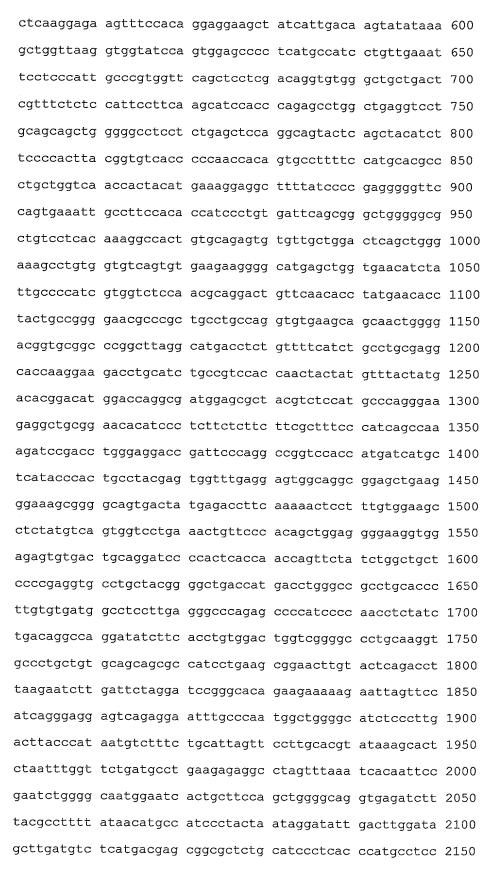
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<211> 610

<212> PRT

<213> Homo sapiens

<400> 113

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Asn Pro Phe Ser Glu Asp Val Lys Arg Pro Pro Ala Pro Leu Val 35 40 45

Thr Asp Lys Glu Ala Arg Lys Lys Val Leu Lys Gln Ala Phe Ser 50 55 60

Ala Asn Gln Val Pro Glu Lys Leu Asp Val Val Val Ile Gly Ser
65 70 75

Gly Phe Gly Gly Leu Ala Ala Ala Ala Ile Leu Ala Lys Ala Gly 80 85 90

Lys Arg Val Leu Val Leu Glu Gln His Thr Lys Ala Gly Gly Cys 95 100 105

Cys	His	Thr	Phe	Gly 110	Lys	Asn	Gly	Leu	Glu 115	Phe	Asp	Thr	Gly	Ile 120
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Ser	Pro	Phe	Asp	Ile 155	Met	Val	Leu	Glu	Gly 160	Pro	Asn	Gly	Arg	Lys 165
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Gln	Ala	Val	Leu	Ser 260	Tyr	Ile	Phe	Pro	Thr 265	Tyr	Gly	Val	Thr	Pro 270
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Phe	His	Thr	Ile	Pro 305	Val	Ile	Gln	Arg	Ala 310	Gly	Gly	Ala	Val	Leu 315
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Ala	Cys	Gly	Val	Ser 335	Val	Lys	Lys	Gly	His 340	Glu	Leu	Val	Asn	Ile 345
Tyr	Cys	Pro	Ile	Val 350	Val	Ser	Asn	Ala	Gly 355	Leu	Phe	Asn	Thr	Tyr 360
Glu	His	Leu	Leu	Pro 365	Gly	Asn	Ala	Arg	Cys 370	Leu	Pro	Gly	Val	Lys 375
Gln	Gln	Leu	Gly	Thr 380	Val	Arg	Pro	Gly	Leu 385	Gly	Met	Thr	Ser	Val 390
Phe	Ile	Cys	Leu	Arg 395	Gly	Thr	Lys	Glu	Asp 400	Leu	His	Leu	Pro	Ser 405
Thr	Asn	Tyr	Tyr	Val 410	Tyr	Tyr	Asp	Thr	Asp 415	Met	Asp	Gln	Ala	Met 420

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<211> 1701

<212> DNA

<213> Homo sapiens

605

<400> 114

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610

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<213> Homo sapiens

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Leu

<210> 116

<211> 584

<212> DNA

<213> Homo sapiens

<400> 116

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<210> 117

<211> 123

<212> PRT

<213> Homo sapiens

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His Val Thr Ile Arg Asp Tyr Gly Val Ser Trp Tyr Gln Gln Arg 50 55 60

Ala Gly Ser Ala Pro Arg Tyr Leu Leu Tyr Tyr Arg Ser Glu Glu
65 70 75

Asp His His Arg Pro Ala Asp Ile Pro Asp Arg Phe Ser Ala Ala 80 85 90

Lys Asp Glu Ala His Asn Ala Cys Val Leu Thr Ile Ser Pro Val 95 100 105

Gln Pro Glu Asp Asp Ala Asp Tyr Tyr Cys Ser Val Gly Tyr Gly
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Phe Ser Pro

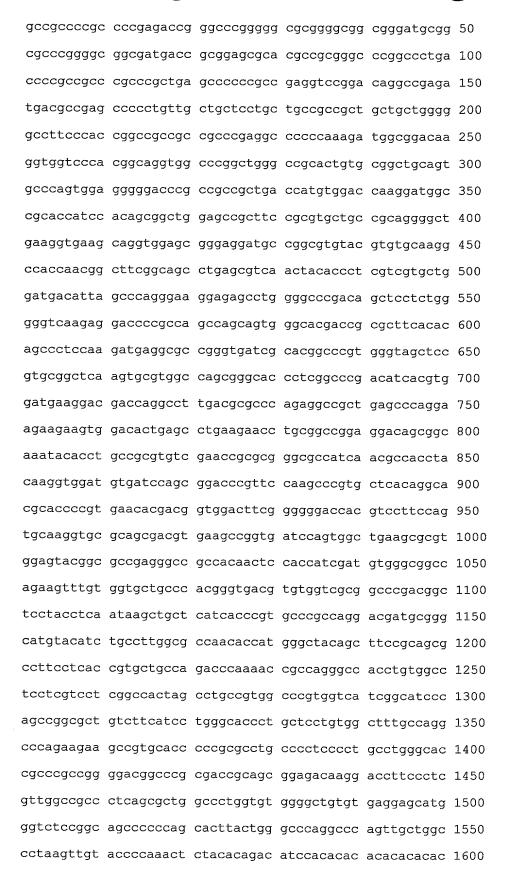
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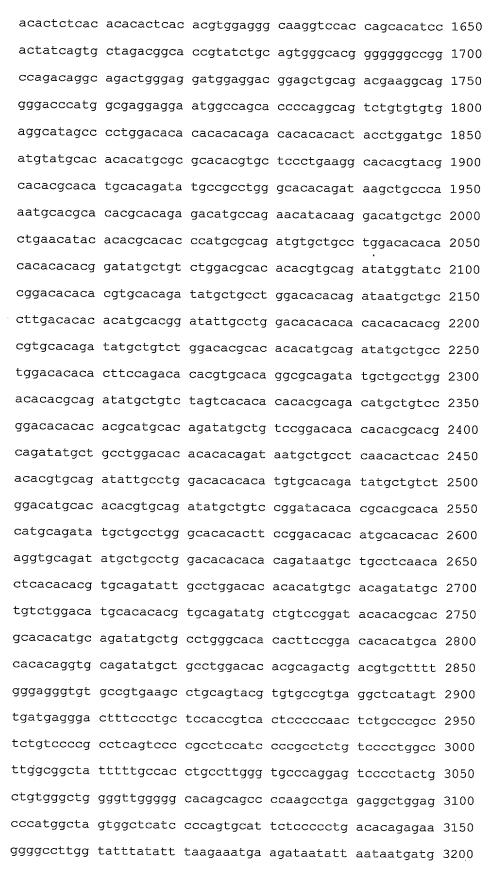
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<212> DNA

<213> Homo sapiens

<400> 118





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<210> 119

<211> 504

<212> PRT

<213> Homo sapiens

<400> 119

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Thr Val Arg Leu Gln Cys Pro Val Glu Gly Asp Pro Pro Pro Leu
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Thr Met Trp Thr Lys Asp Gly Arg Thr Ile His Ser Gly Trp Ser 65 70 75

Arg Phe Arg Val Leu Pro Gln Gly Leu Lys Val Lys Gln Val Glu 80 85 90

Arg Glu Asp Ala Gly Val Tyr Val Cys Lys Ala Thr Asn Gly Phe 95 100 105

Gly Ser Leu Ser Val Asn Tyr Thr Leu Val Val Leu Asp Asp Ile 110 115 120

Ser Pro Gly Lys Glu Ser Leu Gly Pro Asp Ser Ser Ser Gly Gly 125 130

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Gln Pro Ser Lys Met Arg Arg Arg Val Ile Ala Arg Pro Val Gly
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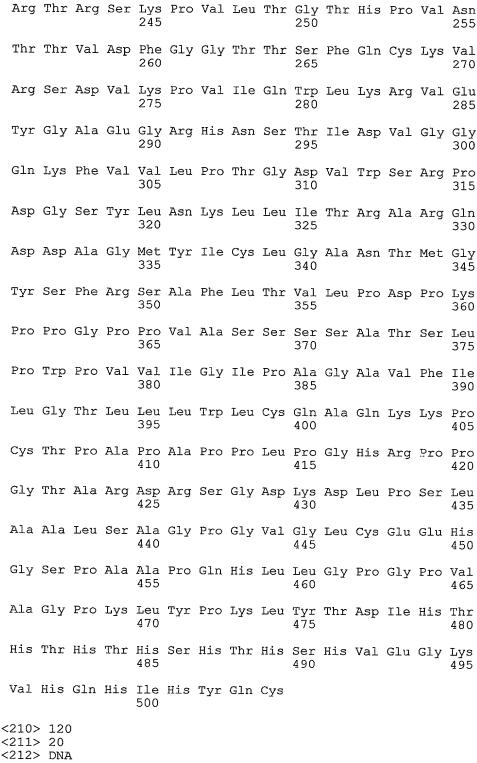
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Leu Arg Pro Glu Asp Ser Gly Lys Tyr Thr Cys Arg Val Ser Asn 215 220 225

Arg Ala Gly Ala Ile Asn Ala Thr Tyr Lys Val Asp Val Ile Gln 230 235 240



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- <223> Synthetic oligonucleotide probe
- <400> 120

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<211> 4420
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<211> 1184

<212> PRT

<213> Homo sapiens

<400> 124

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Pro Ala Asp Thr Leu Glu Ser Pro Gly Glu Trp Thr Trp Phe 50 55 60

Asn Ile Asp Tyr Pro Gly Gly Lys Gly Asp Tyr Glu Arg Leu Asp 65 70 75

Ala Ile Arg Phe Tyr Tyr Gly Asp Arg Val Cys Ala Arg Pro Leu 80 85 90

Arg Leu Glu Ala Arg Thr Thr Asp Trp Thr Pro Ala Gly Ser Thr 95 100 105

Gly Gln Val Val His Gly Ser Pro Arg Glu Gly Phe Trp Cys Leu 110 115 120

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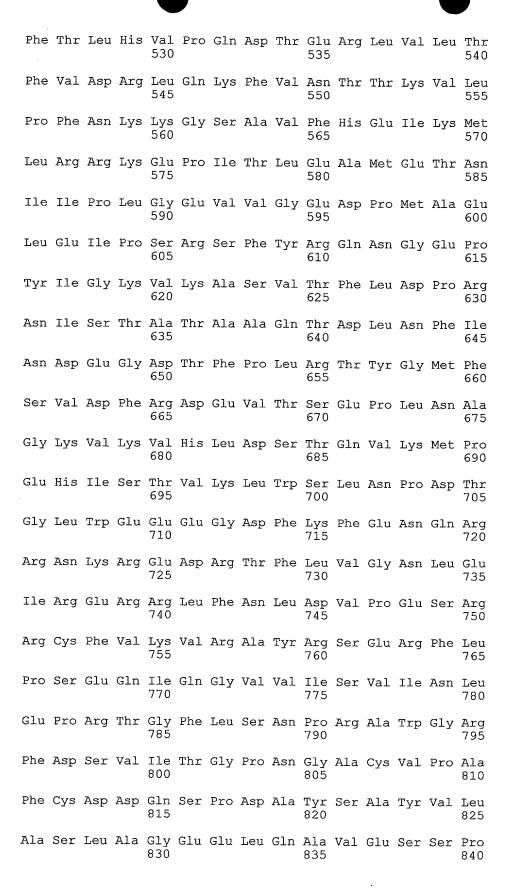
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Met Gly Gln Asp Cys Thr Ala Cys Asp Leu Thr Cys Pro Met Gly 200 205 210

Gln Val Asn Ala Asp Cys Asp Ala Cys Met Cys Gln Asp Phe Met 215 Leu His Gly Ala Val Ser Leu Pro Gly Gly Ala Pro Ala Ser Gly 230 Ala Ala Ile Tyr Leu Leu Thr Lys Thr Pro Lys Leu Leu Thr Gln 245 250 Thr Asp Ser Asp Gly Arg Phe Arg Ile Pro Gly Leu Cys Pro Asp 265 Gly Lys Ser Ile Leu Lys Ile Thr Lys Val Lys Phe Ala Pro Ile Val Leu Thr Met Pro Lys Thr Ser Leu Lys Ala Ala Thr Ile Lys Ala Glu Phe Val Arg Ala Glu Thr Pro Tyr Met Val Met Asn Pro 305 310 Glu Thr Lys Ala Arg Arg Ala Gly Gln Ser Val Ser Leu Cys Cys 320 Lys Ala Thr Gly Lys Pro Arg Pro Asp Lys Tyr Phe Trp Tyr His 335 Asn Asp Thr Leu Leu Asp Pro Ser Leu Tyr Lys His Glu Ser Lys 350 355 Leu Val Leu Arg Lys Leu Gln Gln His Gln Ala Gly Glu Tyr Phe Cys Lys Ala Gln Ser Asp Ala Gly Ala Val Lys Ser Lys Val Ala Gln Leu Ile Val Thr Ala Ser Asp Glu Thr Pro Cys Asn Pro Val 400 Pro Glu Ser Tyr Leu Ile Arg Leu Pro His Asp Cys Phe Gln Asn 410 415 Ala Thr Asn Ser Phe Tyr Tyr Asp Val Gly Arg Cys Pro Val Lys Thr Cys Ala Gly Gln Gln Asp Asn Gly Ile Arg Cys Arg Asp Ala 445 Val Gln Asn Cys Cys Gly Ile Ser Lys Thr Glu Glu Arg Glu Ile Gln Cys Ser Gly Tyr Thr Leu Pro Thr Lys Val Ala Lys Glu Cys 470 Ser Cys Gln Arg Cys Thr Glu Thr Arg Ser Ile Val Arg Gly Arg 490 Val Ser Ala Ala Asp Asn Gly Glu Pro Met Arg Phe Gly His Val 505 Tyr Met Gly Asn Ser Arg Val Ser Met Thr Gly Tyr Lys Gly Thr 520



Lys Phe Asn Pro Asn Ala Ile Gly Val Pro Gln Pro Tyr Leu Asn Lys Leu Asn Tyr Arg Arg Thr Asp His Glu Asp Pro Arg Val Lys Lys Thr Ala Phe Gln Ile Ser Met Ala Lys Pro Arg Pro Asn Ser 875 Ala Glu Glu Ser Asn Gly Pro Ile Tyr Ala Phe Glu Asn Leu Arg 890 900 Ala Cys Glu Glu Ala Pro Pro Ser Ala Ala His Phe Arg Phe Tyr Gln Ile Glu Gly Asp Arg Tyr Asp Tyr Asn Thr Val Pro Phe Asn Glu Asp Asp Pro Met Ser Trp Thr Glu Asp Tyr Leu Ala Trp Trp 935 940 Pro Lys Pro Met Glu Phe Arg Ala Cys Tyr Ile Lys Val Lys Ile Val Gly Pro Leu Glu Val Asn Val Arg Ser Arg Asn Met Gly Gly 965 Thr His Arg Arg Thr Val Gly Lys Leu Tyr Gly Ile Arg Asp Val 980 Arg Ser Thr Arg Asp Arg Asp Gln Pro Asn Val Ser Ala Ala Cys 1000 Leu Glu Phe Lys Cys Ser Gly Met Leu Tyr Asp Gln Asp Arg Val 1010 1015 Asp Arg Thr Leu Val Lys Val Ile Pro Gln Gly Ser Cys Arg Arg 1025 1030 Ala Ser Val Asn Pro Met Leu His Glu Tyr Leu Val Asn His Leu Pro Leu Ala Val Asn Asn Asp Thr Ser Glu Tyr Thr Met Leu Ala 1060 Pro Leu Asp Pro Leu Gly His Asn Tyr Gly Ile Tyr Thr Val Thr 1070 1075 1080 Asp Gln Asp Pro Arg Thr Ala Lys Glu Ile Ala Leu Gly Arg Cys 1090 Phe Asp Gly Thr Ser Asp Gly Ser Ser Arg Ile Met Lys Ser Asn 1105 Val Gly Val Ala Leu Thr Phe Asn Cys Val Glu Arg Gln Val Gly 1120 Arg Gln Ser Ala Phe Gln Tyr Leu Gln Ser Thr Pro Ala Gln Ser 1135 Pro Ala Ala Gly Thr Val Gln Gly Arg Val Pro Ser Arg Arg Gln 1145 1150

Gln Arg Ala Ser Arg Gly Gly Gln Arg Gln Gly Gly Val Val Ala 1160 1165 1170

Ser Leu Arg Phe Pro Arg Val Ala Gln Gln Pro Leu Ile Asn 1175 1180

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<220>

<223> Synthetic oligonucleotide probe

<400> 125

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<210> 126

<211> 23

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<223> Synthetic oligonucleotide probe

<400> 126

ccattgtgca ggtcaggtca cag 23

<210> 127

<211> 40

<212> DNA

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<223> Synthetic oligonucleotide probe

<400> 127

ctggagcaag tgctcagctg cctgtggtca gactggggtc 40

<210> 128

<211> 2819

<212> DNA

<213> Homo sapiens

<400> 128

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ctacctaccc gtacgcatac atacatatgt gtatatatat gtaaactaga 200

caaagatcgc agatcataaa gcaagctctg ctttagtttc caagaagatt 250

acaaagaatt tagagatgta tttgtcaaga tccctgtcga ttcatgccct 300

ttgggttacg gtgtcctcag tgatgcagcc ctaccctttg gtttggggac 350

attatgattt gtgtaagact cagatttaca cggaagaagg gaaagtttgg 400

gattacatgg cctgccagcc ggaatccacg gacatgacaa aatatctgaa 450

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<210> 129 <211> 438

<212> PRT

<213> Homo sapiens

<400> 129

Met Tyr Leu Ser Arg Ser Leu Ser Ile His Ala Leu Trp Val Thr 1 5 10 15

Val Ser Ser Val Met Gln Pro Tyr Pro Leu Val Trp Gly His Tyr
20 25 30

Asp Leu Cys Lys Thr Gln Ile Tyr Thr Glu Glu Gly Lys Val Trp 35 40 45

Asp Tyr Met Ala Cys Gln Pro Glu Ser Thr Asp Met Thr Lys Tyr 50 55 60

Leu Lys Val Lys Leu Asp Pro Pro Asp Ile Thr Cys Gly Asp Pro 75

Pro Glu Thr Phe Cys Ala Met Gly Asn Pro Tyr Met Cys Asn Asn 80 85 90

Glu Cys Asp Ala Ser Thr Pro Glu Leu Ala His Pro Pro Glu Leu 95 100 105

Met Phe Asp Phe Glu Gly Arg His Pro Ser Thr Phe Trp Gln Ser 110 115 120

Ala Thr Trp Lys Glu Tyr Pro Lys Pro Leu Gln Val Asn Ile Thr

				125					130					135
Leu	Ser	Trp	Ser	Lys 140		Ile	Glu	Leu	Thr 145	Asp	Asn	Ile	Val	Ile 150
Thr	Phe	Glu	Ser	Gly 155		Pro	Asp	Gln	Met 160	Ile	Leu	Glu	Lys	Ser 165
Leu	Asp	Tyr	Gly	Arg 170	Thr	Trp	Gln	Pro	Туг 175	Gln	Tyr	Tyr	Ala	Thr 180
Asp	Cys	Leu	Asp	Ala 185	Phe	His	Met	Asp	Pro 190	Lys	Ser	Val	Lys	Asp 195
Leu	Ser	Gln	His	Thr 200	Val	Leu	Glu	Ile	Ile 205	Cys	Thr	Glu	Glu	Tyr 210
Ser	Thr	Gly	Tyr	Thr 215	Thr	Asn	Ser	Lys	Ile 220	Ile	His	Phe	Glu	Ile 225
Lys	Asp	Arg	Phe	Ala 230	Leu	Phe	Ala	Gly	Pro 235	Arg	Leu	Arg	Asn	Met 240
Ala	Ser	Leu	Tyr	Gly 245	Gln	Leu	Asp	Thr	Thr 250	Lys	Lys	Leu	Arg	Asp 255
Phe	Phe	Thr	Val	Thr 260	Asp	Leu	Arg	Ile	Arg 265	Leu	Leu	Arg	Pro	Ala 270
Val	Gly	Glu	Ile	Phe 275	Val	Asp	Glu	Leu	His 280	Leu	Ala	Arg	Tyr	Phe 285
Tyr	Ala	Ile	Ser	Asp 290	Ile	Lys	Val	Arg	Gly 295	Arg	Cys	Lys	Cys	Asn 300
Leu	His	Ala	Thr	Val 305	Cys	Val	Tyr	Asp	Asn 310	Ser	Lys	Leu	Thr	Cys 315
Glu	Cys	Glu	His	Asn 320	Thr	Thr	Gly	Pro	Asp 325	Суз	Gly	Lys	Cys	Lys 330
Lys	Asn	Tyr	Gln	Gly 335	Arg	Pro	Trp	Ser	Pro 340	Gly	Ser	Tyr	Leu	Pro 345
Ile	Pro	Lys	Gly	Thr 350	Ala	Asn	Thr	Cys	Ile 355	Pro	Ser	Ile	Ser	Ser 360
Ile	Gly	Thr	Asn	Val 365	Cys.	Asp	Asn	Glu	Leu 370	Leu	His	Cys	Gln	Asn 375
Gly	Gly	Thr	Cys	His 380	Asn	Asn	Val	Arg	Cys 385	Leu	Суз	Pro	Ala	Ala 390
Tyr	Thr	Gly	Ile	Leu 395	Cys	Glu	Lys	Leu	Arg 400	Cys	Glu	Glu	Ala	Gly 405
Ser	Cys	Gly	Ser	Asp 410	Ser	Gly	Gln	Gly	Ala 415	Pro	Pro	His	Gly	Thr 420
Pro	Ala	Leu	Leu	Leu 425	Leu	Thr	Thr	Leu	Leu 430	Gly	Thr	Ala	Ser	Pro 435
Leu	Val	Phe												

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<223> Synthetic oligonucleotide probe
<400> 132
 aggttcaggg acagcaagtt tggg 24
<210> 133
<211> 50
<212> DNA
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<211> 1493
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<213> Homo sapiens
<400> 134
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ccgggcgagg tgtcctcatg acttctcttg tggaccatgt ccgtgatctt 150
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ctgattttta ccacacccaa gatttttgg aatggaggag acggctcaag 250
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<210> 135

<211> 228

<212> PRT

<213> Homo sapiens

<400> 135

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1 5 10 15

Leu Pro Leu Ser Ala Ser Thr Asp Phe Tyr His Thr Gln Asp Phe
20 25 30

Leu Glu Trp Arg Arg Leu Lys Ser Leu Ala Leu Arg Leu Ala 35 40 45

Gln Tyr Pro Gly Arg Gly Ser Ala Glu Gly Cys Asp Phe Ser Ile His Phe Ser Ser Phe Gly Asp Val Ala Cys Met Ala Ile Cys Ser Cys Gln Cys Pro Ala Ala Met Ala Phe Cys Phe Leu Glu Thr Leu Trp Trp Glu Phe Thr Ala Ser Tyr Asp Thr Thr Cys Ile Gly Leu 105 100 Ala Ser Arg Pro Tyr Ala Phe Leu Glu Phe Asp Ser Ile Ile Gln 115 Lys Val Lys Trp His Phe Asn Tyr Val Ser Ser Ser Gln Met Glu 130 135 125 Cys Ser Leu Glu Lys Ile Gln Glu Glu Leu Lys Leu Gln Pro Pro 140 145 Ala Val Leu Thr Leu Glu Asp Thr Asp Val Ala Asn Gly Val Met 155 1.60 1.65 Asn Gly His Thr Pro Met His Leu Glu Pro Ala Pro Asn Phe Arg 170 Met Glu Pro Val Thr Ala Leu Gly Ile Leu Ser Leu Ile Leu Asn 185 Ile Met Cys Ala Ala Leu Asn Leu Ile Arg Gly Val His Leu Ala 205 Glu His Ser Leu Gln Asp Pro Arg Ser Trp Phe Cys Trp Leu Asp 220

Gln Thr Ser

<210> 136

<211> 239

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 39, 61, 143, 209

<223> unknown base

<400> 136

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<210> 137

<211> 2300

<212> DNA

## <213> Homo sapiens

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<210> 138

<211> 489

<212> PRT

<213> Homo sapiens

<400> 138

Met Glu Ala Pro Asp Tyr Glu Val Leu Ser Val Arg Glu Gln Leu 1 5 10 15

Phe His Glu Arg Ile Arg Glu Cys Ile Ile Ser Thr Leu Leu Phe 20 25 30

Ala Thr Leu Tyr Ile Leu Cys His Ile Phe Leu Thr Arg Phe Lys
35 40 45

Lys Pro Ala Glu Phe Thr Thr Val Asp Asp Glu Asp Ala Thr Val 50 55 60

Asn Lys Ile Ala Leu Glu Leu Cys Thr Phe Thr Leu Ala Ile Ala  $\phantom{0}65\phantom{0}$  70  $\phantom{0}75\phantom{0}$ 

Leu Gly Ala Val Leu Leu Pro Phe Ser Ile Ile Ser Asn Glu 80 85 90

Val Leu Leu Ser Leu Pro Arg Asn Tyr Tyr Ile Gln Trp Leu Asn 95 100 105

Gly Ser Leu Ile His Gly Leu Trp Asn Leu Val Phe Leu Phe Pro 110 115 120

Asn Leu Ser Leu Ile Phe Leu Met Pro Phe Ala Tyr Phe Phe Thr

				125					130					135
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Val	Tyr	Glu	Thr	Val 155	Val	Met	Leu	Met	Leu 160	Leu	Thr	Leu	Leu	Val 165
Leu	Gly	Met	Val	Trp 170	Val	Ala	Ser	Ala	Ile 175	Val	Asp	Lys	Asn	Lys 180
Ala	Asn	Arg	Glu	Ser 185	Leu	Tyr	Asp	Phe	Trp 190	Glu	Tyr	Tyr	Leu	Pro 195
Tyr	Leu	Tyr	Ser	Cys 200	Ile	Ser	Phe	Leu	Gly 205	Val	Leu	Leu	Leu	Leu 210
Val	Cys	Thr	Pro	Leu 215	Gly	Leu	Ala	Arg	Met 220	Phe	Ser	Val	Thr	Gly 225
Lys	Leu	Leu	Val	Lys 230	Pro	Arg	Leu	Leu	Glu 235	Asp	Leu	Glu	Glu	Gln 240
Leu	Tyr	Cys	Ser	Ala 245	Phe	Glu	Glu	Ala	Ala 250	Leu	Thr	Arg	Arg	Ile 255
Cys	Asn	Pro	Thr	Ser 260	Cys	Trp	Leu	Pro	Leu 265	Asp	Met	Glu	Leu	Leu 270
His	Arg	Gln	Val	Leu 275	Ala	Leu	Gln	Thr	Gln 280	Arg	Val	Leu	Leu	Glu 285
Lys	Arg	Arg	Lys	Ala 290	Ser	Ala	Trp	Gln	Arg 295	Asn	Leu	Gly	Tyr	Pro 300
Leu	Ala	Met	Leu	Cys 305	Leu	Leu	Val	Leu	Thr 310	Gly	Leu	Ser	Val	Leu 315
Ile	Val	Ala	Ile	His 320	Ile	Leu	Glu	Leu	Leu 325	Ile	Asp	Glu	Ala	Ala 330
Met	Pro	Arg	Gly	Met 335	Gln	Gly	Thr	Ser	Leu 340	Gly	Gln	Val	Ser	Phe 345
Ser	Lys	Leu	Gly	Ser 350	Phe	Gly	Ala	Val	Ile 355	Gln	Val	Val	Leu	Ile 360
Phe	Tyr	Leu	Met	Val 365	Ser	Ser	Val	Val	Gly 370	Phe	Tyr	Ser	Ser	Pro 375
Leu	Phe	Arg	Ser	Leu 380	Arg	Pro	Arg	Trp	His 385	Asp	Thr	Ala	Met	Thr 390
Gln	Ile	Ile	Gly	Asn 395	Cys	Val	Cys	Leu	Leu 400	Val	Leu	Ser	Ser	Ala 405
Leu	Pro	Val	Phe	Ser 410	Arg	Thr	Leu	Gly	Leu 415	Thr	Arg	Phe	Asp	Leu 420
Leu	Gly	Asp	Phe	Gly 425	Arg	Phe	Asn	Trp	Leu 430	Gly	Asn	Phe	Tyr	Ile 435
Val	Phe	Leu	Tyr	Asn	Ala	Ala	Phe	Ala	Gly	Leu	Thr	Thr	Leu	Cys

440 445 450

Leu Val Lys Thr Phe Thr Ala Ala Val Arg Ala Glu Leu Ile Arg 455 460 465

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Gln Ala Ser Arg Lys Thr Gln His Gln 485

<210> 139

<211> 294

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 53, 57

<223> unknown base

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gagaacagct attccacgag aggatccgcg agtgtattat atcaacactt 200

ctgtttgcaa cactgtacat cctctgccac atcttcctga cccgcttcaa 250

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<211> 526

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 197, 349

<223> unknown base

<400> 140

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tggatgatga agatgccacc gtcaacaaga ttgcqctcqa gctgtqcacc 450

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 tggtccaggt cttcatgctg ctgtgggtga tattactggt cctggctcct 150
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 tecatggace acagtettee aaggagagag agtgaceete acttgeaagg 250
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<211> 124 <212> PRT

<213> Homo sapiens

<400> 146

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Gly Phe Arg Phe Tyr Ser Pro Gln Lys Thr Lys Trp Tyr His Arg 50  $\phantom{000}55$   $\phantom{000}55$ 

Tyr Leu Gly Lys Glu Ile Leu Arg Glu Thr Pro Asp Asn Ile Leu 65 70 75

Glu Val Gln Glu Ser Gly Glu Tyr Arg Cys Gln Ala Gln Gly Ser

Pro Leu Ser Ser Pro Val His Leu Asp Phe Ser Ser Glu Met Gly
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Phe Pro His Ala Ala Gln Ala Asn Val Glu Leu Leu Gly Ser Ser 110 115 120

Asp Leu Leu Thr

<210> 147

<211> 1621

<212> DNA

<213> Homo sapiens

<400> 147

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<sup>&</sup>lt;210> 148

<sup>&</sup>lt;211> 358

<sup>&</sup>lt;212> PRT

## <213> Homo sapiens

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Leu	ı Ile	e Gly	Ala	20 Val	Ile	Ala	Gly	' Arg	Asp 25	Phe	Tyr	Lys	Il€	Leu 30
Gly	v Val	. Pro	Arç	Ser 35	Ala	Ser	Ile	Lys	Asp 40	Ile	Lys	Lys	Ala	Tyr 45
Arg	Lys	: Leu	Ala	Leu 50	Gln	Leu	His	Pro	Asp 55	Arg	Asn	Pro	Asp	Asp 60
Pro	Gln	Ala	Gln	Glu 65	Lys	Phe	Gln	Asp	Leu 70	Gly	Ala	Ala	Tyr	Glu 75
Val	Leu	Ser	Asp	Ser 80	Glu	Lys	Arg	Lys	Gln 85	Tyr	Asp	Thr	Tyr	Gly 90
Glu	Glu	Gly	Leu	Lys 95	Asp	Gly	His	Gln	Ser 100	Ser	His	Gly	Asp	Ile 105
Phe	Ser	His	Phe	Phe 110	Gly	Asp	Phe	Gly	Phe 115	Met	Phe	Gly	Gly	Thr 120
Pro	Arg	Gln	Gln	Asp 125	Arg	Asn	Ile	Pro	Arg 130	Gly	Ser	Asp	Ile	Ile 135
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Val	Glu	Val	Val	Arg 155	Asn	Lys	Pro	Val	Ala 160	Arg	Gln	Ala	Pro	Gly 165
Lys	Arg	Lys	Cys	Asn 170	Cys	Arg	Gln	Glu	Met 175	Arg	Thr	Thr	Gln	Leu 180
Gly	Pro	Gly	Arg	Phe 185	Gln	Met	Thr	Gln	Glu 190	Val	Val	Cys	Asp	Glu 195
Cys	Pro	Asn	Val	Lys 200	Leu	Val	Asn	Glu	Glu 205	Arg	Thr	Leu	Glu	Val 210
Glu	Ile	Glu	Pro	Gly 215	Val	Arg	Asp	Gly	Met 220	Glu	Tyr	Pro	Phe	Ile 225
Gly	Glu	Gly	Glu	Pro 230	His	Val	Asp	Gly	Glu 235	Pro	Gly	Asp	Leu	Arg 240
Phe	Arg	Ile	Lys	Val 245	Val	Lys	His	Pro	Ile 250	Phe	Glu	Arg	Arg	Gly 255
Asp	Asp	Leu	Tyr	Thr 260	Asn	Val	Thr	Ile	Ser 265	Leu	Val	Glu	Ser	Leu 270
Val	Gly	Phe	Glu	Met 275	Asp	Ile	Thr		Leu . 280	Asp	Gly	His	Lys	Val 285
His	Ile	Ser	Arg	Asp 290	Lys	Ile	Thr		Pro 295	Gly	Ala	Lys	Leu	Trp 300

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Lys Lys Gly Glu Gly Leu Pro Asn Phe Asp Asn Asn Ile Lys
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                                      310
 Gly Ser Leu Ile Ile Thr Phe Asp Val Asp Phe Pro Lys Glu Gln
                  320
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 Gly Ser Val Gln Lys Val Tyr Asn Gly Leu Gln Gly Tyr
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<211> 509
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<223> unknown base
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<210> 151

<211> 226

<212> PRT

<213> Homo sapiens

<400> 151

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Phe Leu Ala Ser Phe Ala Ala Leu Val Leu Val Cys Arg Gln Arg 20 25 30

Tyr Cys Arg Pro Arg Asp Leu Leu Gln Arg Tyr Asp Ser Lys Pro

35 40 45 Ile Val Asp Leu Ile Gly Ala Met Glu Thr Gln Ser Glu Pro Ser Glu Leu Glu Leu Asp Asp Val Val Ile Thr Asn Pro His Ile Glu Ala Ile Leu Glu Asn Glu Asp Trp Ile Glu Asp Ala Ser Gly Leu 85 Met Ser His Cys Ile Ala Ile Leu Lys Ile Cys His Thr Leu Thr 105 Glu Lys Leu Val Ala Met Thr Met Gly Ser Gly Ala Lys Met Lys 110 Thr Ser Ala Ser Val Ser Asp Ile Ile Val Val Ala Lys Arg Ile 125 135 Ser Pro Arg Val Asp Asp Val Val Lys Ser Met Tyr Pro Pro Leu 140 145 150 Asp Pro Lys Leu Leu Asp Ala Arg Thr Thr Ala Leu Leu Leu Ser Val Ser His Leu Val Leu Val Thr Arg Asn Ala Cys His Leu Thr 170 175 180 Gly Gly Leu Asp Trp Ile Asp Gln Ser Leu Ser Ala Ala Glu Glu 185 190 195 His Leu Glu Val Leu Arg Glu Ala Ala Leu Ala Ser Glu Pro Asp 200 Lys Gly Leu Pro Gly Pro Glu Gly Phe Leu Gln Glu Gln Ser Ala 215 220

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<211> 1027

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 1017, 1020

<223> unknown base

<400> 152

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<210> 153 <211> 138 <212> PRT <213> Homo sapiens

<220>

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<220>

<221> Transmembrane domains

<222> 12-30, 33-52, 69-89 and 93-109

<223> Transmembrane domains

<220>

<221> Aminoacyl-transfer RNA Synthetases.

<222> 49-59

<223> Aminoacyl-transfer RNA synthetases class-II protein.

<400> 153

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Asp Lys Ala Leu Leu Ala Ile Gly Asn Val Leu Phe Val Ala Gly 35 40 45

Leu Ala Phe Val Ile Gly Leu Glu Arg Thr Phe Arg Phe Phe 50 55 60

Gln Lys His Lys Met Lys Ala Thr Gly Phe Phe Leu Gly Gly Val
65 70 75

Phe Val Val Leu Ile Gly Trp Pro Leu Ile Gly Met Ile Phe Glu 80 85 90

Ile Tyr Gly Phe Phe Leu Leu Phe Arg Gly Phe Phe Pro Val Val 95 100 105

Val Gly Phe Ile Arg Arg Val Pro Val Leu Gly Ser Leu Leu Asn 110 115 120

Leu Pro Gly Ile Arg Ser Phe Val Asp Lys Val Gly Glu Ser Asn 125 130 135

Asn Met Val

<210> 154

<211> 405

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 66

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<400> 154

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<210> 155

<211> 1781

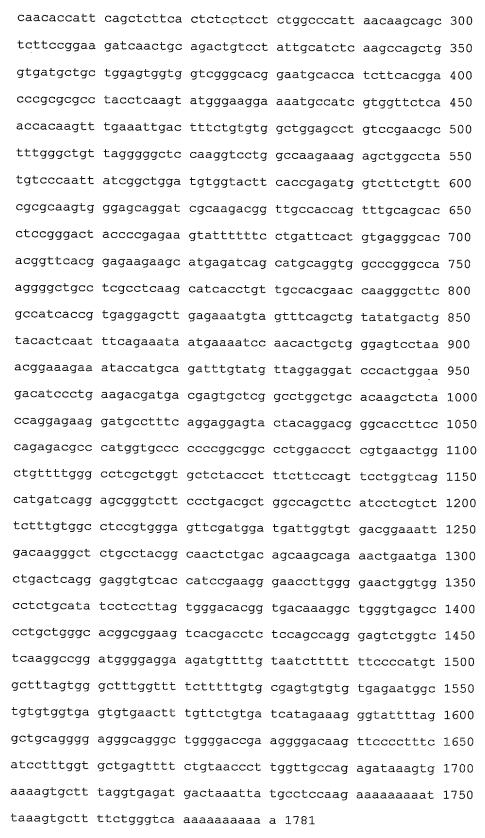
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<212> DNA

<213> Homo sapiens

<400> 155

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<210> 156

<211>	378	
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<213> Homo sapiens

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Glu Glu Tyr Tyr Arg Thr Gly Thr Phe Pro Glu Thr Pro Met Val

				290					295					300
Pro	Pro	Arg	Arg	Pro 305	Trp	Thr	Leu	Val	Asn 310	Trp	Leu	Phe	Trp	Ala 315
Ser	Leu	Val	Leu	Tyr 320	Pro	Phe	Phe	Gln	Phe 325	Leu	Val	Ser	Met	Ile 330
Arg	Ser	Gly	Ser	Ser 335	Leu	Thr	Leu	Ala	Ser 340	Phe	Ile	Leu	Val	Phe 345
Phe	Val	Ala	Ser	Val 350	Gly	Val	Arg	Trp	Met 355	Ile	Gly	Val	Thr	Glu 360
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Leu Asn Asp

<210> 157 <211> 1849 <212> DNA <213> Homo sapiens

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<400> 157

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<211> 409

<212> PRT

<213> Homo sapiens

<400> 158

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Gly Phe Leu Leu Gly Glu Val Lys Gly Glu Ala Lys Asn Ser Ile 35 40 45

Thr Asp Ser Gln Met Asp Asp Val Glu Val Val Tyr Thr Ile Asp 50 55 60

Ile Gln Lys Tyr Ile Pro Cys Tyr Gln Leu Phe Ser Phe Tyr Asn 65 70 75

Ser Ser Gly Glu Val Asn Glu Gln Ala Leu Lys Lys Ile Leu Ser 80 85 90

Asn Val Lys Lys Asn Val Val Gly Trp Tyr Lys Phe Arg Arg His 95 100 105

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Thr	Pro	Ser	lle	Ile 140		Glu	Ser	Cys	Ser 145		His	Arg	Leu	Glu 150
His	Ser	Leu	Tyr	Lys 155	Pro	Gln	Lys	Gly	Leu 160		His	Arg	Val	Pro 165
Leu	Val	Val	Ala	Asn 170	Leu	Gly	Met	Ser	Glu 175		Leu	Gly	Tyr	Lys 180
Thr	Val	Ser	Gly	Ser 185	Cys	Met	Ser	Thr	Gly 190		Ser	Arg	Ala	Val 195
Gln	Thr	His	Ser	Ser 200	Lys	Phe	Phe	Glu	Glu 205		Gly	Ser	Leu	Lys 210
Glu	Val	His	Lys	Ile 215	Asn	Glu	Met	Tyr	Ala 220	Ser	Leu	Gln	Glu	Glu 225
Leu	Lys	Ser	Ile	Cys 230	Lys	Lys	Val	Glu	Asp 235	Ser	Glu	Gln	Ala	Val 240
Asp	Lys	Leu	Val	Lys 245	Asp	Val	Asn	Arg	Leu 250	Lys	Arg	Glu	Ile	Glu 255
Lys	Arg	Arg	Gly	Ala 260	Gln	Ile	Gln	Ala	Ala 265	Arg	Glu	Lys	Asn	Ile 270
Gln	Lys	Asp	Pro	Gln 275	Glu	Asn	Ile	Phe	Leu 280	Cys	Gln	Ala	Leu	Arg 285
Thr	Phe	Phe	Pro	Asn 290	Ser	Glu	Phe	Leu	His 295	Ser	Cys	Val	Met	Ser 300
Leu	Lys	Asn	Arg	His 305	Val	Ser	Lys	Ser	Ser 310	Cys	Asn	Tyr	Asn	His 315
His	Leu	Asp	Val	Val 320	Asp	Asn	Leu	Thr	Leu 325	Met	Val	Glu	His	Thr 330
Asp	Ile	Pro	Glu	Ala 335	Ser	Pro	Ala	Ser	Thr 340	Pro	Gln	Ile	Ile	Lys 345
His	Lys	Ala	Leu	Asp 350	Leu	Asp	Asp	Arg	Trp 355	Gln	Phe	Lys	Arg	Ser 360
Arg	Leu	Leu	Asp	Thr 365	Gln	Asp	Lys	Arg	Ser 370	Lys	Ala	Asn	Thr	Gly 375
Ser	Ser	Asn	Gln	Asp 380	Lys	Ala	Ser	Lys	Met 385	Ser	Ser	Pro	Glu	Thr 390
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<212> PRT

<213> Homo sapiens

<400> 160

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Ser Glu Val Arg Arg Leu Tyr Val Ser Lys Gly Phe Asn Lys Asn

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	Ser	Leu	Gln	Ser	8C		Asp	Phe	: Lys	Ser 85		Val	Ser	Glu	Gln 90
	Cys	Asn	His	Leu	. Gln 95	Ala	Val	Phe	Ala	Ser 100		Туг	Lys	Lys	Phe 105
	Asp	Glu	Phe	Phe	Lys 110	Glu	Leu	Leu	Glu	Asn 115	Ala	Glu	Lys	Ser	Leu 120
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	Ser	Glu	Leu	Phe	Lys 140	Asp	Leu	Phe	Val	Glu 145	Leu	Lys	Arg	Tyr	Tyr 150
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	Ala	Arg	Leu	Leu	Glu 170	Arg	Met	Phe	Arg	Leu 175	Val	Asn	Ser	Gln	Tyr 180
	His	Phe	Thr	Asp	Glu 185	Tyr	Leu	Glu	Cys	Val 190	Ser	Lys	Tyr	Thr	Glu 195
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٠	Val	Thr	Arg	Ala	Phe 215	Val	Ala	Ala	Arg	Thr 220	Phe	Ala	Gln	Gly	Leu 225
1	Ala	Val	Ala	Gly	Asp 230	Val	Val	Ser	Lys	Val 235	Ser	Val	Val	Asn	Pro 240
,	Thr	Ala	Gln	Суз	Thr 245	His	Ala	Leu	Leu	Lys 250	Met	Ile	Tyr	Cys	Ser 255
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	Ser	Asn	Ile	Met	Arg 275	Gly	Cys	Leu	Ala	Asn 280	Gln	Gly	Asp	Leu	Asp 285
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Z	lsp	Val	Lys	Ile	Ser 320	Asp	Ala	Ile	Met	Asn 325	Met	Gln	Asp	Asn	Ser 330
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Ε	ro	Leu	Pro	Ala	Gly	Arg	Ile	Ser	Arg	Ser	Ile	Ser	Glu	Ser	Ala

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Thr	Ala	Ala	Gly	Thr 380	Ser	Leu	Asp	Arg	Leu 385	Val	Thr	Asp	Val	Lys 390
Glu	Lys	Leu	Lys	Gln 395	Ala	Lys	Lys	Phe	Trp 400	Ser	Ser	Leu	Pro	Ser 405
Asn	Val	Cys	Asn	Asp 410	Glu	Arg	Met	Ala	Ala 415	Gly	Asn	Gly	Asn	Glu 420
Asp	Asp	Cys	Trp	Asn 425	Gly	Lys	Gly	Lys	Ser 430	Arg	Tyr	Leu	Phe	Ala 435
Val	Thr	Gly	Asn	Gly 440	Leu	Ala	Asn	Gln	Gly 445	Asn	Asn	Pro	Glu	Val 450
Gln	Val	Asp	Thr	Ser 455	Lys	Pro	Asp	Ile	Leu 460	Ile	Leu	Arg	Gln	Ile 465
Met	Ala	Leu	Arg	Val 470	Met	Thr	Ser	Lys	Met 475	Lys	Asn	Ala	Tyr	Asn 480
Gly	Asn	Asp	Val	Asp 485	Phe	Phe	Asp	Ile	Ser 490	Asp	Glu	Ser	Ser	Gly 495
Glu	Gly	Ser	Gly	Ser 500	Gly	Cys	Glu	Tyr	Gln 505	Gln	Cys	Pro	Ser	Glu 510
Phe	Asp	Tyr	Asn	Ala 515	Thr	Asp	His	Ala	Gly 520	Lys	Ser	Ala	Asn	Glu 525
Lys	Ala	Asp	Ser	Ala 530	Gly	Val	Arg	Pro	Gly 535	Ala	Gln	Ala	Tyr	Leu 540
Leu	Thr	Val	Phe	Cys 545	Ile	Leu	Phe	Leu	Val 550	Met	Gln	Arg	Glu	Trp 555
Arg														
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<213> Homo sapiens
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Pro Lys Phe Leu Ser Leu Leu Gly Thr Glu Ile Ile Glu Asn Ala 50 55 60

Val Glu Phe Ile Leu Arg Ser Met Ser Arg Ser Thr Gly Phe Met 65 70 75

Glu Phe Asp Asp Asn Glu Gly Lys His Ser Ser Lys 80 85

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<211> 277

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<213> Homo sapiens

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Leu Cys Lys Ser Tyr Phe Pro Tyr Leu Met Ala Val Leu Thr Pro 35 40 45

Lys Ser Asn Arg Lys Met Glu Ser Lys Lys Arg Glu Leu Phe Ser 50 55 60

Gln Ile Lys Gly Leu Thr Gly Ala Ser Gly Lys Val Ala Leu Leu 65 70 75

Glu Leu Gly Cys Gly Thr Gly Ala Asn Phe Gln Phe Tyr Pro Pro 80 85 90

Gly Cys Arg Val Thr Cys Leu Asp Pro Asn Pro His Phe Glu Lys 95 100 105

Phe Leu Thr Lys Ser Met Ala Glu Asn Arg His Leu Gln Tyr Glu 110 115 120

Arg Phe Val Val Ala Pro Gly Glu Asp Met Arg Gln Leu Ala Asp 125 130 135

Gly Ser Met Asp Val Val Cys Thr Leu Val Leu Cys Ser Val 140 145

Gln Ser Pro Arg Lys Val Leu Gln Glu Val Arg Arg Val Leu Arg 155 160 165

Pro Gly Gly Val Leu Phe Phe Trp Glu His Val Ala Glu Pro Tyr 170 175 180

Gly Ser Trp Ala Phe Met Trp Gln Gln Val Phe Glu Pro Thr Trp 185 190 195

Lys His Ile Gly Asp Gly Cys Cys Leu Thr Arg Glu Thr Trp Lys 200 205 210

Asp Leu Glu Asn Ala Gln Phe Ser Glu Ile Gln Met Glu Arg Gln 225

Pro Pro Pro Leu Lys Trp Leu Pro Val Gly Pro His Ile Met Gly 230 235 240

Lys Ala Val Lys Gln Ser Phe Pro Ser Ser Lys Ala Leu Ile Cys 245 250

Ser Phe Pro Ser Leu Gln Leu Glu Gln Ala Thr His Gln Pro Ile  $260 \hspace{1cm} 265 \hspace{1cm} 265 \hspace{1cm} 270 \hspace{1cm}$ 

Tyr Leu Pro Leu Arg Gly Thr 275

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<212> DNA

<213> Homo sapiens

<400> 170

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<210> 171

<211> 371

<212> PRT

<213> Homo sapiens

<400> 171

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Ala Leu Phe Leu Leu Val Leu His His Asn Phe Leu Ser Leu Ser 20 25 30

Ser Leu Leu Arg Asn Glu Val Thr Asp Ser Gly Ile Val Gly Pro 35 40 45

Gln Pro Ile Asp Phe Val Pro Asn Ala Leu Arg His Ala Val Asp
50 55 60

Gly Arg Gln Glu Glu Ile Pro Val Val Ile Ala Ala Ser Glu Asp 65 70 75

Arg Leu Gly Gly Ala Ile Ala Ile Asn Ser Ile Gln His Asn 80 85 90

Thr Arg Ser Asn Val Ile Phe Tyr Ile Val Thr Leu Asn Asn Thr 95 100 105

Ala Asp His Leu Arg Ser Trp Leu Asn Ser Asp Ser Leu Lys Ser 110 115 120

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125 130 130

Lys Val Lys Glu Asp Pro Asp Gln Gly Glu Ser Met Lys Pro Leu 140 145 150

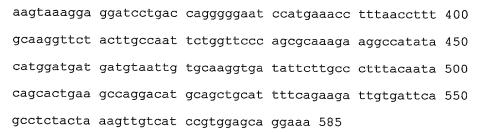
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170 175

Leu Ala Leu Tyr Asn Thr Ala Leu Lys Pro Gly His Ala Ala Ala

				185					190					195
Phe	Ser	Glu	Asp	Cys 200	Asp	Ser	Ala	Ser	Thr 205	Lys	Val	Val	Ile	Arg 210
Gly	Ala	Gly	Asn	Gln 215	Tyr	Asn	Tyr	Ile	Gly 220	Tyr	Leu	Asp	Tyr	Lys 225
Lys	Glu	Arg	Ile	Arg 230	Lys	Leu	Ser	Met	Lys 235	Ala	Ser	Thr	Cys	Ser 240
Phe	Asn	Pro	Gly	Val 245	Phe	Val	Ala	Asn	Leu 250	Thr	Glu	Trp	Lys	Arg 255
Gln	Asn	Ile	Thr	Asn 260	Gln	Leu	Glu	Lys	Trp 265	Met	Lys	Leu	Asn	Val 270
Glu	Glu	Gly	Leu	Tyr 275	Ser	Arg	Thr	Leu	Ala 280	Gly	Ser	Ile	Thr	Thr 285
Pro	Pro	Leu	Leu	Ile 290	Val	Phe	Tyr	Gln	Gln 295	His	Ser	Thr	Ile	Asp 300
Pro	Met	Trp	Asn	Val 305	Arg	His	Leu	Gly	Ser 310	Ser	Ala	Gly	Lys	Arg 315
Tyr	Ser	Pro	Gln	Phe 320	Val	Lys	Ala	Ala	Lys 325	Leu	Leu	His	Trp	Asn 330
Gly	His	Leu	Lys	Pro 335	Trp	Gly	Arg	Thr	Ala 340	Ser	Tyr	Thr	Asp	Val 345
Trp	Glu	Lys	Trp	Tyr 350	Ile	Pro	Asp	Pro	Thr 355	Gly	Lys	Phe	Asn	Leu 360
Ile	Arg	Arg	Tyr	Thr 365	Glu	Ile	Ser	Asn	Ile 370	Lys				
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~ ~ + ~														

tggtttttgc cccataaatt ccctcagctt gagcagtttg ttaaggaatg 50
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<210> 173

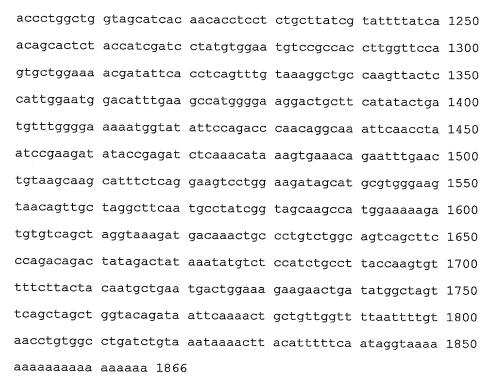
<211> 1866

<212> DNA

<213> Homo sapiens

<400> 173

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<210> 174

<211> 823 <212> DNA

<213> Homo sapiens

<400> 174

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<210> 175

<211> 87

<212> PRT

<213> Homo sapiens

<400> 175

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Cys Trp Ala Cys His Ser Arg Leu Pro Thr Leu Thr Leu Ser Leu
35 40 45

Asn Pro Val Pro Thr Pro Ala Leu Ala Pro Val Leu Arg Arg Pro 50 55 60

His His Pro Arg Ser Pro Ala Met Lys Ala Ala Thr Cys Cys Ser 65 70 75

Pro Glu Gly Pro Trp Pro Ser Leu Glu Pro Arg Thr 80 85

<210> 176

<211> 1660

<212> DNA

<213> Homo sapiens

<400> 176

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gatgtttacc ttcagattca tcaccaccct tctggttcac attttcattt 300
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gctgttccag ccactgtgga catttgcat cctcatttt ttctgggtcc 650
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gttggtcgtac catttaattg gcctcatctg gactagtgaa ttcatccttg 750

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<210> 177

<211> 445

<212> PRT

<213> Homo sapiens

<400> 177

Met Ser Gly Arg Asp Thr Ile Leu Gly Leu Cys Ile Leu Ala Leu 1 5 10 15

Ala Leu Ser Leu Ala Met Met Phe Thr Phe Arg Phe Ile Thr Thr 20 25 30

Leu Leu Val His Ile Phe Ile Ser Leu Val Ile Leu Gly Leu Leu 35 40

Phe Val Cys Gly Val Leu Trp Trp Leu Tyr Tyr Asp Tyr Thr Asn 50 55 60

Asp Leu Ser Ile Glu Leu Asp Thr Glu Arg Glu Asn Met Lys Cys
65 70 70

Val Leu Gly Phe Ala Ile Val Ser Thr Gly Ile Thr Ala Val Leu 80 85 90

Leu Val Leu Ile Phe Val Leu Arg Lys Arg Ile Lys Leu Thr Val

				0.5					100					
				95					100					105
Glu	ı Leu	Phe	Gln	Ile 110		Asn	Lys	: Ala	Ile 115		Ser	Ala	Pro	Phe 120
Leu	l Leu	Phe	Gln	Pro 125		Trp	Thr	Phe	Ala 130		Leu	Ile	Phe	Phe 135
Trp	Val	Leu	Trp	Val 140	Ala	Val	Leu	. Leu	Ser 145		Gly	Thr	Ala	Gly 150
Ala	Ala	Gln	Val	Met 155	Glu	Gly	Gly	Gln	Val 160		Tyr	Lys	Pro	Leu 165
Ser	Gly	Ile	Arg	Tyr 170	Met	Trp	Ser	Tyr	His 175		Ile	Gly	Leu	Ile 180
Trp	Thr	Ser	Glu	Phe 185	Ile	Leu	Ala	Cys	Gln 190		Met	Thr	Ile	Ala 195
Gly	Ala	Val	Val	Thr 200	Cys	Tyr	Phe	Asn	Arg 205		Lys	Asn	Asp	Pro 210
Pro	Asp	His	Pro	Ile 215	Leu	Ser	Ser	Leu	Ser 220	Ile	Leu	Phe	Phe	Tyr 225
His	Gln	Gly	Thr	Val 230	Val	Lys	Gly	Ser	Phe 235	Leu	Ile	Ser	Val	Val 240
Arg	Ile	Pro	Arg	Ile 245	Ile	Val	Met	Tyr	Met 250	Gln	Asn	Ala	Leu	Lys 255
Glu	Gln	Gln	His	Gly 260	Ala	Leu	Ser	Arg	Tyr 265	Leu	Phe	Arg	Cys	Cys 270
Tyr	Cys	Cys	Phe	Trp 275	Cys	Leu	Asp	Lys	Tyr 280	Leu	Leu	His	Leu	Asn 285
Gln	Asn	Ala	Tyr	Thr 290	Thr	Thr	Ala	Ile	Asn 295	Gly	Thr	Asp	Phe	Cys 300
Thr	Ser	Ala	Lys	Asp 305	Ala	Phe	Lys	Ile	Leu 310	Ser	Lys	Asn	Ser	Ser 315
His	Phe	Thr	Ser	Ile 320	Asn	Cys	Phe	Gly	Asp 325	Phe	Ile	Ile	Phe	Leu 330
Gly	Lys	Val	Leu	Val 335	Val	Cys	Phe	Thr	Val 340	Phe	Gly	Gly	Leu	Met 345
Ala	Phe	Asn	Tyr	Asn 350	Arg	Ala	Phe	Gln	Val 355	Trp	Ala	Val	Pro	Leu 360
Leu	Leu	Val	Ala	Phe 365	Phe	Ala	Tyr	Leu	Val 370	Ala	His	Ser	Phe	Leu 375
Ser	Val	Phe	Glu	Thr 380	Val	Leu	Asp	Ala	Leu 385	Phe	Leu	Cys	Phe	Ala 390
Val	Asp	Leu	Glu	Thr 395	Asn	Asp	Gly	Ser	Ser 400	Glu	Lys	Pro	Tyr	Phe 405
Met	Asp	Gln	Glu	Phe	Leu	Ser	Phe	Val	Lys	Arg	Ser	Asn	Lys	Leu

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Asn Asn Ala Arg Ala Gln Gln Asp Lys His Ser Leu Arg Asn Glu 425 430 435

Glu Gly Thr Glu Leu Gln Ala Ile Val Arg
440 445

<210> 178

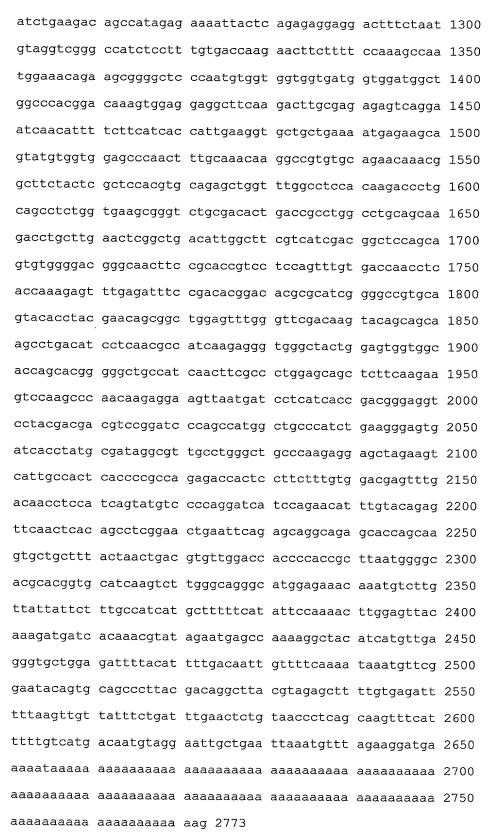
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<212> DNA

<213> Homo sapiens

<400> 178

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<210> 179

<211> 678

<212> PRT

<213> Homo sapiens

<400> 179

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Ala Lys Lys Ile Lys Arg Pro Lys Phe Thr Val Pro Gln Ile Asn
35

Cys Asp Val Lys Ala Gly Lys Ile Ile Asp Pro Glu Phe Ile Val 50 55 60

Lys Cys Pro Ala Gly Cys Gln Asp Pro Lys Tyr His Val Tyr Gly
65 70 75

Thr Asp Val Tyr Ala Ser Tyr Ser Ser Val Cys Gly Ala Ala Val 80 85 90

His Ser Gly Val Leu Asp Asn Ser Gly Gly Lys Ile Leu Val Arg 95 100 105

Lys Val Ala Gly Gln Ser Gly Tyr Lys Gly Ser Tyr Ser Asn Gly 110 115 120

Val Gln Ser Leu Ser Leu Pro Arg Trp Arg Glu Ser Phe Ile Val 125 130 135

Leu Glu Ser Lys Pro Lys Lys Gly Val Thr Tyr Pro Ser Ala Leu 140 145 150

Thr Tyr Ser Ser Ser Lys Ser Pro Ala Ala Gln Ala Gly Glu Thr 155 160 165

Thr Lys Ala Tyr Gln Arg Pro Pro Ile Pro Gly Thr Thr Ala Gln 170 175 180

Pro Val Thr Leu Met Gln Leu Leu Ala Val Thr Val Ala Val Ala 185 190 195

Thr Pro Thr Thr Leu Pro Arg Pro Ser Pro Ser Ala Ala Ser Thr 200 205 210

Thr Ser Ile Pro Arg Pro Gln Ser Val Gly His Arg Ser Gln Glu 215 220 225

Met Asp Leu Trp Ser Thr Ala Thr Tyr Thr Ser Ser Gln Asn Arg 230 235 240

Pro Arg Ala Asp Pro Gly Ile Gln Arg Gln Asp Pro Ser Gly Ala 245 250 255

Ala Phe Gln Lys Pro Val Gly Ala Asp Val Ser Leu Gly Leu Val 260 265 270

Pro Lys Glu Glu Leu Ser Thr Gln Ser Leu Glu Pro Val Ser Leu 275 280 285

Gly Asp Pro Asn Cys Lys Ile Asp Leu Ser Phe Leu Ile Asp Gly

			290					295					300
Ser Thr	Ser	Ile	Gly 305	Lys	Arg	Arg	Phe	Arg 310		Gln	Lys	Gln	Leu 315
Leu Ala	Asp	Val	Ala 320	Gln	Ala	Leu	Asp	· Ile 325	Gly	Pro	Ala	Gly	7 Pro 330
Leu Met	Gly	Val	Val 335	Gln	Tyr	Gly	Asp	Asn 340	Pro	Ala	Thr	His	Phe 345
Asn Leu	Lys	Thr	His 350	Thr	Asn	Ser	Arg	Asp 355	Leu	Lys	Thr	Ala	11e 360
Glu Lys	Ile	Thr	Gln 365	Arg	Gly	Gly	Leu	Ser 370	Asn	Val	Gly	Arg	Ala 375
Ile Ser	Phe	Val	Thr 380	Lys	Asn	Phe	Phe	Ser 385	Lys	Ala	Asn	Gly	Asn 390
Arg Ser	Gly .	Ala	Pro 395	Asn	Val	Val	Val	Val 400	Met	Val	Asp	Gly	Trp 405
Pro Thr	Asp :	Lys	Val 410	Glu	Glu	Ala	Ser	Arg 415	Leu	Ala	Arg	Glu	Ser 420
Gly Ile	Asn	Ile	Phe 425	Phe	Ile	Thr	Ile	Glu 430	Gly	Ala	Ala	Glu	Asn 435
Glu Lys	Gln '	Tyr	Val 440	Val	Glu	Pro	Asn	Phe 445	Ala	Asn	Lys	Ala	Val 450
Cys Arg	Thr A	Asn	Gly 455	Phe	Tyr	Ser	Leu	His 460	Val	Gln	Ser	Trp	Phe 465
Gly Leu	His ]	Lys	Thr 470	Leu	Gln	Pro	Leu	Val 475	Lys	Arg	Val	Cys	Asp 480
Thr Asp	Arg 1	Leu .	Ala 485	Cys	Ser	Lys	Thr	Cys 490	Leu	Asn	Ser	Ala	Asp 495
Ile Gly			500					505					510
Phe Arg	Thr V	/al :	Leu 515	Gln	Phe	Val	Thr	Asn 520	Leu	Thr	Lys	Glu	Phe 525
Glu Ile		ţ	530					535					540
Tyr Glu	Gln A	rg ا	Leu 545	Glu	Phe	Gly	Phe	Asp 550	Lys	Týr	Ser	Ser	Lys 555
Pro Asp	Ile I	Leu A	Asn . 560	Ala	Ile	Lys		Val 565	Gly	Tyr	Trp	Ser	Gly 570
Gly Thr		į	575					580					585
Phe Lys		Ļ	90					595					600
Thr Asp	Gly A	rg S	Ger !	Гуr	Asp .	Asp	Val .	Arg	Ile	Pro	Ala	Met	Ala

				605					610					615
Ala	His	Leu	Lys	Gly 620	Val	Ile	Thr	Tyr	Ala 625	Ile	Gly	Val	Ala	Trp 630
Ala	Ala	Gln	Glu	Glu 635	Leu	Glu	Val	Ile	Ala 640	Thr	His	Pro	Ala	Arg 645
Asp	His	Ser	Phe	Phe 650	Val	Asp	Glu	Phe	Asp 655	Asn	Leu	His	Gln	Tyr 660
Val	Pro	Arg	Ile	Ile 665	Gln	Asn	Ile	Cys	Thr 670	Glu	Phe	Asn	Ser	Gln 675
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Asp Thr Leu Leu Ile Leu Gly Asn Val Ser Glu Phe Gln Arg Val 50 55 60

Val Glu Val Leu Gln Asp Ser Val Asp Phe Asp Ile Asp Val Asn 65 70 75

Ala Ser Val Phe Glu Thr Asn Ile Arg Val Val Gly Gly Leu Leu 80 85 90

Ser Ala His Leu Leu Ser Lys Lys Ala Gly Val Glu Val Glu Ala 95 100 105

Gly Trp Pro Cys Ser Gly Pro Leu Leu Arg Met Ala Glu Glu Ala 110 115 120

Ala Arg Lys Leu Leu Pro Ala Phe Gln Thr Pro Thr Gly Met Pro

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Pro	Val	. Thr	Cys	Thr 155	Ala	Gly	7 Ile	e Gly	Thr 160		: Ile	val	. Glu	Phe 165
Ala	Thr	Leu	ı Ser	Ser 170	Leu	Thr	Gly	Asp	Pro 175		. Phe	e Glu	Asp	Val 180
Ala	Arg	y Val	. Ala	Leu 185	Met	Arg	Leu	Trp	Glu 190	Ser	Arg	Ser	: Asp	195
Gly	Leu	Val	Gly	Asn 200	His	Ile	Asp	Val	Leu 205	Thr	Gly	Lys	Trp	Val 210
Ala	Gln	Asp	Ala	Gly 215	Ile	Gly	Ala	Gly	Val 220	Asp	Ser	Tyr	Phe	Glu 225
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Ala	Met	Phe	Leu	Glu 245	Tyr	Asn	Lys	Ala	Ile 250	Arg	Asn	Tyr	Thr	Arg 255
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				Glu 395					400					405
				Ile 410					415					Val 420
				Gly 425					430					Ile 435
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Asn Thr Val Ser Ser 485	Gly Pro Trp	Glu Pro Pro Ala 490	Arg Pro Gly 495
Thr Leu Phe Ser Pro	Glu Asn His	Asp Gln Ala Arg 505	Glu Arg Lys 510
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Lys Met Gly Arg Leu Leu Gln Tyr Ser Cys Cys Pro Val Val 260 265 270

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Val Asn Ile Arg Gly Lys Leu Val Ser Leu Glu Lys Tyr Arg Gly
35 40 45

Ser Val Ser Leu Val Val Asn Val Ala Ser Glu Cys Gly Phe Thr
50 55 60

Asp Gln His Tyr Arg Ala Leu Gln Gln Leu Gln Arg Asp Leu Gly
65 70 75

Pro His His Phe Asn Val Leu Ala Phe Pro Cys Asn Gln Phe Gly 80 85 90

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Arg Thr Tyr Ser Val Ser Phe Pro Met Phe Ser Lys Ile Ala Val 110 115 120

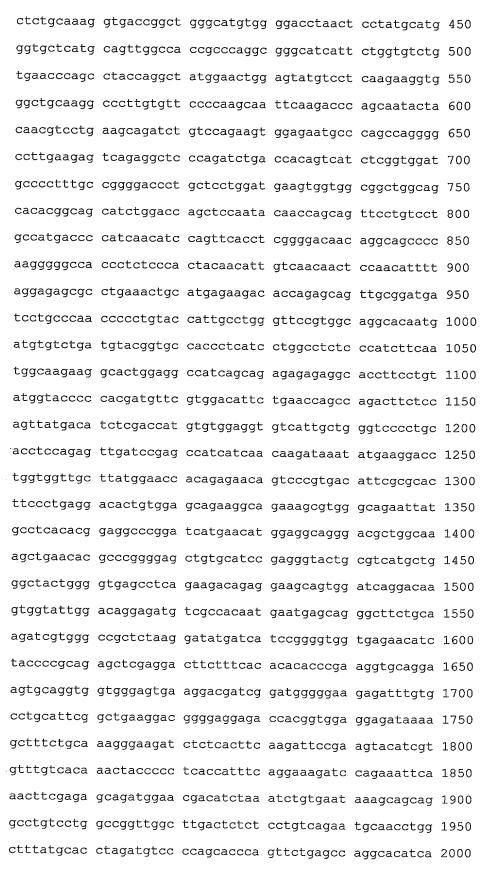
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Ser Gly Lys Glu Pro Thr Trp Asn Phe Trp Lys Tyr Leu Val Ala 140 145 150

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Val Gln Gly Cys Thr Lys Lys His Leu Asn Ser Lys Thr Val Gly 65 70 75

Gln Cys Leu Glu Thr Thr Ala Gln Arg Val Pro Glu Arg Glu Ala 80 85 90

Leu Val Val Leu His Glu Asp Val Arg Leu Thr Phe Ala Gln Leu 95 100 105

Lys Glu Glu Val Asp Lys Ala Ala Ser Gly Leu Leu Ser Ile Gly
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Leu Cys Lys Gly Asp Arg Leu Gly Met Trp Gly Pro Asn Ser Tyr 125 130 135

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Val Leu Lys Lys Val Gly Cys Lys Ala Leu Val Phe Pro Lys Gln
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Pro Asp Leu Thr Thr Val Ile Ser Val Asp Ala Pro Leu Pro Gly 215 220 225

Thr Leu Leu Leu Asp Glu Val Val Ala Ala Gly Ser Thr Arg Gln 230 235 240

His Leu Asp Gln Leu Gln Tyr Asn Gln Gln Phe Leu Ser Cys His

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Leu	Ala	Ser	Pro	Ile 335	Phe	Asn	Gly	Lys	Lys 340	Ala	Leu	Glu	Ala	Ile 345
Ser	Arg	Glu	Arg	Gly 350	Thr	Phe	Leu	Tyr	Gly 355	Thr	Pro	Thr	Met	Phe 360
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Val	Gly	Val	Lys	Asp 545	Asp	Arg	Met	Gly	Glu 550	Glu	Ile	Cys	Ala	Cys 555
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<212> PRT

<213> Homo sapiens

<400> 197

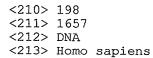
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Ala Gly Trp Leu Leu Leu Leu Leu Arg Gly Gly Ala Gln Ala 20 25 30

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35 40 45 Pro Asn Lys Met Lys Thr Val Lys Cys Ala Pro Gly Val Asp Val Cys Thr Glu Ala Val Gly Ala Val Glu Thr Ile His Gly Gln Phe Ser Leu Ala Val Arg Gly Cys Gly Ser Gly Leu Pro Gly Lys Asn Asp Arg Gly Leu Asp Leu His Gly Leu Leu Ala Phe Ile Gln Leu Gln Gln Cys Ala Gln Asp Arg Cys Asn Ala Lys Leu Asn Leu Thr 115 Ser Arg Ala Leu Asp Pro Ala Gly Asn Glu Ser Ala Tyr Pro Pro Asn Gly Val Glu Cys Tyr Ser Cys Val Gly Leu Ser Arg Glu Ala 145 Cys Gln Gly Thr Ser Pro Pro Val Val Ser Cys Tyr Asn Ala Ser 160 Asp His Val Tyr Lys Gly Cys Phe Asp Gly Asn Val Thr Leu Thr Ala Ala Asn Val Thr Val Ser Leu Pro Val Arg Gly Cys Val Gln 190 Asp Glu Phe Cys Thr Arg Asp Gly Val Thr Gly Pro Gly Phe Thr Leu Ser Gly Ser Cys Cys Gln Gly Ser Arg Cys Asn Ser Asp Leu 215 220 Arg Asn Lys Thr Tyr Phe Ser Pro Arg Ile Pro Pro Leu Val Arg 230 235 Leu Pro Pro Pro Glu Pro Thr Thr Val Ala Ser Thr Thr Ser Val 250 Thr Thr Ser Thr Ser Ala Pro Val Arg Pro Thr Ser Thr Thr Lys 260 Pro Met Pro Ala Pro Thr Ser Gln Thr Pro Arg Gln Gly Val Glu 285 His Glu Ala Ser Arg Asp Glu Glu Pro Arg Leu Thr Gly Gly Ala 290 Ala Gly His Gln Asp Arg Ser Asn Ser Gly Gln Tyr Pro Ala Lys 305 Gly Gly Pro Gln Gln Pro His Asn Lys Gly Cys Val Ala Pro Thr 320 330 Ala Gly Leu Ala Ala Leu Leu Leu Ala Val Ala Ala Gly Val Leu 340

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<212> PRT

<213> Homo sapiens

<400> 199

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His Tyr Asp Tyr Gln Thr Leu Arg Ile Gly Gly Leu Val Phe Ala 35 40 45

Val Val Leu Phe Ser Val Gly Ile Leu Leu Ile Leu Ser Arg Arg 50 55 60

Cys Lys Cys Ser Phe Asn Gln Lys Pro Arg Ala Pro Gly Asp Glu 65 70 75

Glu Ala Gln Val Glu Asn Leu Ile Thr Ala Asn Ala Thr Glu Pro $80 \\ 85 \\ 90$ 

Gln Lys Gln Arg Thr Glu Val Gln Pro Ser Gly Gly Ser Leu Trp 95 100

Asn Leu Arg Arg Leu Leu Glu Pro Leu Asp Ala Asn Val Asp Ala 110 115 120

<210> 200

<211> 415

<212> DNA

<213> Homo sapiens

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<211> 99

<212> PRT

<213> Homo sapiens

<400> 201

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20 25 30

Glu Ser Thr Ile Glu Asn Tyr Ala Ser Arg Pro Glu Ala Phe Asn 35 40 45

Thr Pro Phe Leu Asn Ile Asp Lys Leu Arg Ser Ala Phe Lys Ala 50 55 60

Asp Glu Phe Leu Asn Trp His Ala Leu Phe Glu Ser Ile Lys Arg
65 70 75

Lys Leu Pro Phe Leu Asn Trp Asp Ala Phe Pro Lys Leu Lys Gly 80 85 90

Leu Arg Ser Ala Thr Pro Asp Ala Gln
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<211> 678

<212> DNA

<213> Homo sapiens

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<213> Homo sapiens

<400> 204

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<210> 205

<211> 392

<212> PRT

<213> Homo sapiens

<400> 205

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Phe Leu Leu Pro Ser Ala Gln Gly Arg Gln Lys Glu Ser Gly Ser 20 25 30

Lys Trp Lys Val Phe Ile Asp Gln Ile Asn Arg Ser Leu Glu Asn 35 40 45

Tyr Glu Pro Cys Ser Ser Gln Asn Cys Ser Cys Tyr His Gly Val
50 55 60

Ile Glu Glu Asp Leu Thr Pro Phe Arg Gly Gly Ile Ser Arg Lys
65 70 75

Met Met Ala Glu Val Val Arg Arg Lys Leu Gly Thr His Tyr Gln 80 85 90

Ile Thr Lys Asn Arg Leu Tyr Arg Glu Asn Asp Cys Met Phe Pro

				95	5				100					105
Sei	a Arg	ј Суз	Ser	Gly 110	Val	. Glu	His	Phe	: Ile 115		Glu	Val	Ile	Gly 120
Arg	J Leu	Pro	Asp	Met 125	Glu	Met	. Val	Ile	Asn 130		Arg	Asp	Туг	Pro 135
Gln	val	. Pro	Lys	Trp 140		Glu	Pro	Ala	Ile 145		Val	Phe	Ser	Phe 150
Ser	Lys	Thr	Ser	Glu 155	Tyr	His	Asp	Ile	Met 160	Tyr	Pro	Ala	Trp	Thr 165
Phe	Trp	Glu	Gly	Gly 170	Pro	Ala	Val	Trp	Pro 175	Ile	Tyr	Pro	Thr	Gly 180
Leu	Gly	Arg	Trp	Asp 185	Leu	Phe	Arg	Glu	Asp 190	Leu	Val	Arg	Ser	Ala 195
Ala	Gln	Trp	Pro	Trp 200	Lys	Lys	Lys	Asn	Ser 205	Thr	Ala	Tyr	Phe	Arg 210
Gly	Ser	Arg	Thr	Ser 215	Pro	Glu	Arg	Asp	Pro 220	Leu	Ile	Leu	Leu	Ser 225
Arg	Lys	Asn	Pro	Lys 230	Leu	Val	Asp	Ala	Glu 235	Tyr	Thr	Lys	Asn	Gln 240
Ala	Trp	Lys	Ser	Met 245	Lys	Asp	Thr	Leu	Gly 250	Lys	Pro	Ala	Ala	Lys 255
Asp	Val	His	Leu	Val 260	Asp	His	Cys	Lys	Tyr 265	Lys	Tyr	Leu	Phe	Asn 270
Phe	Arg	Gly	Val	Ala 275	Ala	Ser	Phe	Arg	Phe 280	Lys	His	Leu	Phe	Leu 285
Cys	Gly	Ser	Leu	Val 290	Phe	His	Val	Gly	Asp 295	Glu	Trp	Leu	Glu	Phe 300
Phe	Tyr	Pro	Gln	Leu 305	Lys	Pro	Trp	Val	His 310	Tyr	Ile	Pro	Val	Lys 315
Thr	Asp	Leu	Ser	Asn 320	Val	Gln	Glu	Leu	Leu 325	Gln	Phe	Val	Lys	Ala 330
Asn	Asp	Asp	Val	Ala 335	Gln	Glu	Ile	Ala	Glu 340	Arg	Gly	Ser	Gln	Phe 345
Ile	Arg	Asn	His	Leu 350	Gln	Met	Asp	Asp	Ile 355	Thr	Cys	Tyr	Trp	Glu 360
Asn	Leu	Leu	Ser	Glu 365	Tyr	Ser	Lys	Phe	Leu 370	Ser	Tyr	Asn	Val	Thr 375
Arg	Arg	Lys		Tyr 380	Asp	Gln	Ile	Ile	Pro 385	Lys	Met	Leu	Lys	Thr 390
Glu	Leu													

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<211> 1425 <212> DNA <213> Homo sapiens

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Ile	e Let	ı Ala	Phe		Thr	Gly	. Val	Glu			Arg	r Phe	. Thr	15 Ser 30
Leu	a Arç	g Pro	Leu	Leu 35	Gly	Gly	Ile	Pro	Glu 40	Ser	Gly	Gly	Pro	Asp 45
Ala	. Arg	g Gln	Gly	Trp 50	Leu	Ala	Ala	Leu	Gln 55	Asp	Arg	Ser	· Ile	Leu 60
Ala	Pro	Leu	Ala	Trp 65	Asp	Leu	Gly	Leu	Leu 70	Leu	Leu	Phe	Val	Gly 75
Gln	His	Ser	Leu	Met 80	Ala	Ala	Glu	Arg	Val 85	Lys	Ala	Trp	Thr	Ser 90
Arg	Tyr	Phe	Gly	Val 95	Leu	Gln	Arg	Ser	Leu 100	Tyr	Val	Ala	Cys	Thr 105
Ala	Leu	Ala	Leu	Gln 110	Leu	Val	Met	Arg	Tyr 115	Trp	Glu	Pro	Ile	Pro 120
Lys	Gly	Pro	Val	Leu 125	Trp	Glu	Ala	Arg	Ala 130	Glu	Pro	Trp	Ala	Thr 135
		Pro		140					145					150
		Phe		155					160					165
Gly	Leu	Lys	Gln	Val 170	Tyr	Tyr	His	Val	Leu 175	Gly	Leu	Gly	Glu	Pro 180
		Leu		185					190					195
		Pro		200					205					210
		Leu		215					220					225
		Leu		230					235					240
		Arg		245			Arg	Lys	Leu 250	His	Leu	Leu	Ser	Arg 255
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## <213> Homo sapiens

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<210> 209

<211> 331

<212> PRT

<213> Homo sapiens

<400> 209

Met Ala Ser Ala Leu Trp Thr Val Leu Pro Ser Arg Met Ser Leu 1 5 10 15

Arg Ser Leu Lys Trp Ser Leu Leu Leu Leu Ser Leu Leu Ser Phe 20 25 30

Phe Val Met Trp Tyr Leu Ser Leu Pro His Tyr Asn Val Ile Glu 35 40 45

Arg Val Asn Trp Met Tyr Phe Tyr Glu Tyr Glu Pro Ile Tyr Arg
50 55 60

Gln Asp Phe His Phe Thr Leu Arg Glu His Ser Asn Cys Ser His 65 70 75

Gln Asn Pro Phe Leu Val Ile Leu Val Thr Ser His Pro Ser Asp 80 85 90

Val Lys Ala Arg Gln Ala Ile Arg Val Thr Trp Gly Glu Lys Lys 95 100 105

Ser Trp Trp Gly Tyr Glu Val Leu Thr Phe Phe Leu Leu Gly Gln 110 115 120

Glu Ala Glu Lys Glu Asp Lys Met Leu Ala Leu Ser Leu Glu Asp 125 130 135

Glu His Leu Leu Tyr Gly Asp Ile Ile Arg Gln Asp Phe Leu Asp 140 145 150

Thr Tyr Asn Asn Leu Thr Leu Lys Thr Ile Met Ala Phe Arg Trp
155 160 165

Val Thr Glu Phe Cys Pro Asn Ala Lys Tyr Val Met Lys Thr Asp 170 175 Thr Asp Val Phe Ile Asn Thr Gly Asn Leu Val Lys Tyr Leu Leu 190 185 Asn Leu Asn His Ser Glu Lys Phe Phe Thr Gly Tyr Pro Leu Ile 205 Asp Asn Tyr Ser Tyr Arg Gly Phe Tyr Gln Lys Thr His Ile Ser Tyr Gln Glu Tyr Pro Phe Lys Val Phe Pro Pro Tyr Cys Ser Gly Leu Gly Tyr Ile Met Ser Arg Asp Leu Val Pro Arg Ile Tyr Glu Met Met Gly His Val Lys Pro Ile Lys Phe Glu Asp Val Tyr Val 260 265 Gly Ile Cys Leu Asn Leu Leu Lys Val Asn Ile His Ile Pro Glu 275 280 Asp Thr Asn Leu Phe Phe Leu Tyr Arg Ile His Leu Asp Val Cys 290 295 Gln Leu Arg Arg Val Ile Ala Ala His Gly Phe Ser Ser Lys Glu 305 310 Ile Ile Thr Phe Trp Gln Val Met Leu Arg Asn Thr Thr Cys His

Tyr

<210> 210 <211> 745 <212> DNA

<213> Homo sapiens

<400> 210

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ggacatttcc ttctgtggag acacggtgga gaactaaaca atttttaaa 600 gccactatgg atttagtcat ctgaatatgc tgtgcagaaa aaatatgggc 650 tccagtggtt tttaccatgt cattctgaaa tttttctcta ctagttatgt 700 ttgatttctt taagtttcaa taaaatcatt tagcattgaa aaaaa 745

<210> 211

<211> 185

<212> PRT

<213> Homo sapiens

<400> 211

Met Lys Phe Thr Ile Val Phe Ala Gly Leu Leu Gly Val Phe Leu 1 5 10 15

Ala Pro Ala Leu Ala Asn Tyr Asn Ile Asn Val Asn Asp Asp Asn 20 25 30

Asn Asn Ala Gly Ser Gly Gln Gln Ser Val Ser Val Asn Asn Glu 35 40 45

His Asn Val Ala Asn Val Asp Asn Asn Asn Gly Trp Asp Ser Trp 50 55 60

Asn Ser Ile Trp Asp Tyr Gly Asn Gly Phe Ala Ala Thr Arg Leu 65 70 75

Phe Gln Lys Lys Thr Cys Ile Val His Lys Met Asn Lys Glu Val 80 85 90

Met Pro Ser Ile Gln Ser Leu Asp Ala Leu Val Lys Glu Lys Lys 95 100 105

Leu Gln Gly Lys Gly Pro Gly Gly Pro Pro Pro Lys Gly Leu Met
110 115 120

Tyr Ser Val Asn Pro Asn Lys Val Asp Asp Leu Ser Lys Phe Gly 125 130 135

Lys Asn Ile Ala Asn Met Cys Arg Gly Ile Pro Thr Tyr Met Ala 140 145 150

Glu Glu Met Gln Glu Ala Ser Leu Phe Phe Tyr Ser Gly Thr Cys 155 160 165

Tyr Thr Thr Ser Val Leu Trp Ile Val Asp Ile Ser Phe Cys Gly 170 175 180

Asp Thr Val Glu Asn 185

<210> 212

<211> 1706

<212> DNA

<213> Homo sapiens

<400> 212

catttctgaa actaatcgtg tcagaattga ctttgaaaag cattgctttt 50 tacagaagta tattaacttt ttaggagtaa tttctagttt ggattgtaat 100

atgaaataat ttaaaagggc ttcgctcata tataggaaaa tcgcatatgg 150 tcctagtatt aaattcttat tgcttactga tttttttgag ttaagagttg 200 ttatatqcta qaatatqaqq atqtqaatat aaataaqaqa aqaaaaaaqa 250 ataaagtaga ttgagtctcc aattttatgt aagcttcaga agaactggtt 300 tgtttacatg caagcttata gttgaaatat ttttcaggaa ttacatgaat 350 gacagtette gaaccaatgt gtttgttega tttcaaccag agactatage 400 atgtgcttgc atctaccttg cagctagagc acttcagatt ccgttgccaa 450 ctcgtcccca ttggtttctt ctttttggta ctacagaaga ggaaatccag 500 gaaatctgca tagaaacact taggetttat accaqaaaaa agccaaacta 550 tgaattactg gaaaaagaag tagaaaaaag aaaagtagcc ttacaagaag 600 ccaaattaaa agcaaaggga ttgaatccgg atggaactcc agccctttca 650 accetgggtg gattttctcc agcetccaag ccatcatcac caaqaqaagt 700 aaaagctgaa gagaaatcac caatctccat taatgtgaag acagtcaaaa 750 aagaacctga qqataqacaa caqqcttcca aaaqccctta caatqqtqta 800 agaaaagaca gcaagagaag tagaaatagc agaagtgcaa gtcgatcgag 850 gtcaagaaca cgatcacgtt ctagatcaca tactccaaga agacactata 900 ataataggcg gagtcgatct ggaacataca gctcgagatc aagaagcagg 950 tcccgcagtc acagtgaaag ccctcgaaga catcataatc atggttctcc 1000 tcaccttaag gccaagcata ccagagatga tttaaaaagt tcaaacagac 1050 atggtcataa aaggaaaaaa tctcgttctc gatctcagag caagtctcgg 1100 gatcactcag atgcagccaa gaaacacagg catgaaaggg gacatcatag 1150 ggacaggcgt gaacgatctc gctcctttga gaggtcccat aaaagcaagc 1200 accatggtgg cagtcgctca ggacatggca ggcacaggcg ctgactttct 1250 cttcctttga gcctgcatca gttcttggtt ttgcctatct acagtgtgat 1300 cttgaaaccc tctaggtctc tagaacactg aggacagttt cttttgaaaa 1400 gaactatgtt aatttttttg cacattaaaa tgccctagca gtatctaatt 1450 aaaaaccatg gtcaggttca attgtacttt attatagttg tgtattgttt 1500 attgctataa gaactggagc gtgaattctg taaaaatgta tcttattttt 1550 atacagataa aattgcagac actgttctat ttaagtggtt atttgtttaa 1600 atgatggtga atactttctt aacactggtt tgtctgcatg tgtaaagatt 1650 

## aaaagt 1706

<210> 213

<211> 299

<212> PRT

<213> Homo sapiens

<400> 213

Met Asn Asp Ser Leu Arg Thr Asn Val Phe Val Arg Phe Gln Pro 1 5 10 15

Glu Thr Ile Ala Cys Ala Cys Ile Tyr Leu Ala Ala Arg Ala Leu 20 25 30

Gln Ile Pro Leu Pro Thr Arg Pro His Trp Phe Leu Leu Phe Gly 35 40 45

Thr Thr Glu Glu Glu Ile Gln Glu Ile Cys Ile Glu Thr Leu Arg
50 55 60

Leu Tyr Thr Arg Lys Lys Pro Asn Tyr Glu Leu Leu Glu Lys Glu
65 70 75

Val Glu Lys Arg Lys Val Ala Leu Gln Glu Ala Lys Leu Lys Ala 80 85 90

Lys Gly Leu Asn Pro Asp Gly Thr Pro Ala Leu Ser Thr Leu Gly
95 100 105

Gly Phe Ser Pro Ala Ser Lys Pro Ser Ser Pro Arg Glu Val Lys 110 115 120

Ala Glu Glu Lys Ser Pro Ile Ser Ile Asn Val Lys Thr Val Lys
125
130
135

Lys Glu Pro Glu Asp Arg Gln Gln Ala Ser Lys Ser Pro Tyr Asn 140 145

Gly Val Arg Lys Asp Ser Lys Arg Ser Arg Asn Ser Arg Ser Ala 155 160 165

Ser Arg Ser Arg Ser Arg Thr Arg Ser Arg Ser Arg Ser His Thr

Pro Arg Arg His Tyr Asn Asn Arg Arg Ser Arg Ser Gly Thr Tyr 185 190 195

Ser Ser Arg Ser Arg Ser Arg Ser Arg Ser His Ser Glu Ser Pro
200 205 210

Arg Arg His His Asn His Gly Ser Pro His Leu Lys Ala Lys His 215 220 225

Thr Arg Asp Asp Leu Lys Ser Ser Asn Arg His Gly His Lys Arg 230 235 240

Lys Lys Ser Arg Ser Arg Ser Gln Ser Lys Ser Arg Asp His Ser 245 250

Asp Ala Ala Lys Lys His Arg His Glu Arg Gly His His Arg Asp 260 265 270

Arg Arg Glu Arg Ser Arg Ser Phe Glu Arg Ser His Lys Ser Lys

275 280 285

His His Gly Gly Ser Arg Ser Gly His Gly Arg His Arg Arg 290 295

<210> 214

<211> 730

<212> DNA <213> Homo sapiens

<220>

<221> unsure

<222> 72-73, 85, 91, 127, 226, 268, 454, 484, 513, 566, 663

<223> unknown base

<400> 214

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<210> 215

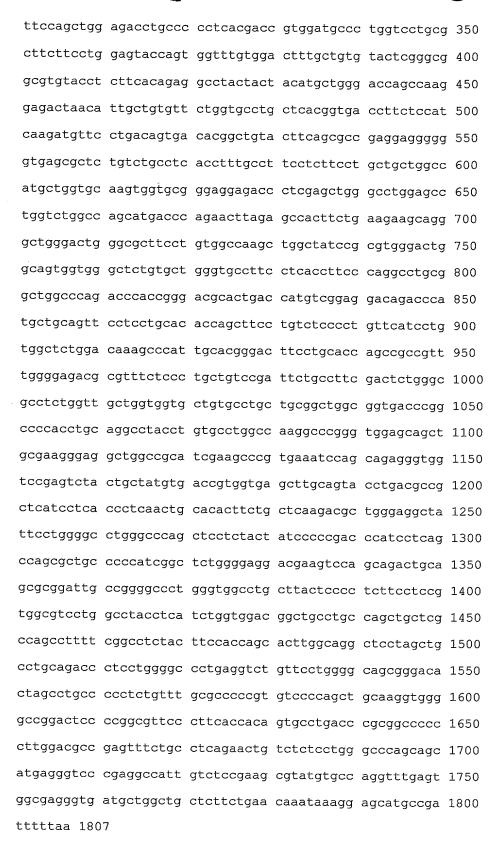
<211> 1807

<212> DNA

<213> Homo sapiens

<400> 215

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<210> 216

<211> 479 <212> PRT

<213> Homo sapiens

<400> 216

Met Ala Val Leu Gly Val Gln Leu Val Val Thr Leu Leu Thr Ala 1 5 10 15

Thr Leu Met His Arg Leu Ala Pro His Cys Ser Phe Ala Arg Trp
20 25 30

Leu Leu Cys Asn Gly Ser Leu Phe Arg Tyr Lys His Pro Ser Glu

Glu Glu Leu Arg Ala Leu Ala Gly Lys Pro Arg Pro Arg Gly Arg
50 55 60

Lys Glu Arg Trp Ala Asn Gly Leu Ser Glu Glu Lys Pro Leu Ser
65 70 75

Val Pro Arg Asp Ala Pro Phe Gln Leu Glu Thr Cys Pro Leu Thr 80 85 90

Thr Val Asp Ala Leu Val Leu Arg Phe Phe Leu Glu Tyr Gln Trp 95 100 105

Phe Val Asp Phe Ala Val Tyr Ser Gly Gly Val Tyr Leu Phe Thr 110 115 120

Glu Ala Tyr Tyr Tyr Met Leu Gly Pro Ala Lys Glu Thr Asn Ile 125 130 135

Ala Val Phe Trp Cys Leu Leu Thr Val Thr Phe Ser Ile Lys Met
140 145 150

Phe Leu Thr Val Thr Arg Leu Tyr Phe Ser Ala Glu Glu Gly Gly 155 160 165

Glu Arg Ser Val Cys Leu Thr Phe Ala Phe Leu Phe Leu Leu Leu 170 175 180

Ala Met Leu Val Gln Val Val Arg Glu Glu Thr Leu Glu Leu Gly
185 190 190

Leu Glu Pro Gly Leu Ala Ser Met Thr Gln Asn Leu Glu Pro Leu 200 205 210

Leu Lys Lys Gln Gly Trp Asp Trp Ala Leu Pro Val Ala Lys Leu 215 220 225

Ala Ile Arg Val Gly Leu Ala Val Val Gly Ser Val Leu Gly Ala 230 235 240

Phe Leu Thr Phe Pro Gly Leu Arg Leu Ala Gln Thr His Arg Asp 245 250 255

Ala Leu Thr Met Ser Glu Asp Arg Pro Met Leu Gln Phe Leu Leu 260 265 270

His Thr Ser Phe Leu Ser Pro Leu Phe Ile Leu Trp Leu Trp Thr 275 280 285

Lys Pro Ile Ala Arg Asp Phe Leu His Gln Pro Pro Phe Gly Glu

				290					295					300
Thr	Arg	Phe	Ser	Leu 305	Leu	Ser	Asp	Ser	Ala 310	Phe	Asp	Ser	Gly	Arg 315
Leu	Trp	Leu	Leu	Val 320	Val	Leu	Cys	Leu	Leu 325	Arg	Leu	Ala	Val	Thr 330
Arg	Pro	His	Leu	Gln 335	Ala	Tyr	Leu	Суз	Leu 340	Ala	Lys	Ala	Arg	Val 345
Glu	Gln	Leu	Arg	Arg 350	Glu	Ala	Gly	Arg	Ile 355	Glu	Ala	Arg	Glu	Ile 360
Gln	Gln	Arg	Val	Val 365	Arg	Val	Tyr	Cys	Tyr 370	Val	Thr	Val	Val	Ser 375
Leu	Gln	Tyr	Leu	Thr 380	Pro	Leu	Ile	Leu	Thr 385	Leu	Asn	Cys	Thr	Leu 390
Leu	Leu	Lys	Thr	Leu 395	Gly	Gly	Tyr	Ser	Trp 400	Gly	Leu	Gly	Pro	Ala 405
Pro	Leu	Leu	Ser	Pro 410	Asp	Pro	Ser	Ser	Ala 415	Ser	Ala	Ala	Pro	Ile 420
Gly	Ser	Gly	Glu	Asp 425	Glu	Val	Gln	Gln	Thr 430	Ala	Ala	Arg	Ile	Ala 435
Gly	Ala	Leu	Gly	Gly 440	Leu	Leu	Thr	Pro	Leu 445	Phe	Leu	Arg	Gly	Val 450
Leu	Ala	Tyr	Leu	Ile 455	Trp	Trp	Thr	Ala	Ala 460	Суз	Gln	Leu	Leu	Ala 465
Ser	Leu	Phe	Gly	Leu 470	Tyr	Phe	His	Gln	His 475	Leu	Ala	Gly	Ser	
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gctg	gctg	ct c	tgta	acgg	c ag	tttg	ttcc	gat	acaa	gca	cccg	tntt	ga 1	50
ggag	gagc	tt c	gggc	cctg	g cg	ggga	agcc	gag	gccc	aga	ggca	ggaa	ag 2	00

ageggtggge caatggeett agtgaggaga agecaetgte tgtgeecega 250 gatgeecegt teeagetgga gaeetgeece eteaegaeeg tggatgeeet 300

ggtcctgcgc ttcttcctgg agtaccagtg gtttgtggac tttgctgtgt 350

actegggegg egtgtacete tteacagagg ectaetaeta eatgetggga 400 ceagecaagg agactaacat tgetgtgte tggtgeetge teacagtgae 450 cttetecate aagatgttee tgacagtgae aeggetgtae tteagegeeg 500 aggaggggg tgagegetet gtetgeetea eetttgeett eetetteetg 550 ctgetggeea tgetggtgea ageg 574

<210> 218

<211> 2571

<212> DNA

<213> Homo sapiens

<400> 218

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<sup>&</sup>lt;210> 219

<sup>&</sup>lt;211> 632

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 219

Met Lys Ala Leu Leu Leu Val Leu Pro Trp Leu Ser Pro Ala

1				5					10					15
Asn	Tyr	Ile	Asp	Asn 20	Val	Gly	Asn	Leu	His 25	Phe	Leu	Tyr	Ser	Glu 30
Leu	Суз	Lys	Gly	Ala 35	Ser	His	Tyr	Gly	Leu 40	Thr	Lys	Asp	Arg	Lys 45
Arg	Arg	Ser	Gln	Asp 50	Gly	Cys	Pro	Asp	Gly 55	Cys	Ala	Ser	Leu	Thr 60
Ala	Thr	Ala	Pro	Ser 65	Pro	Glu	Val	Ser	Ala 70	Ala	Ala	Thr	Ile	Ser 75
Leu	Met	Thr	Asp	Glu 80	Pro	Gly	Leu	Asp	Asn 85	Pro	Ala	Tyr	Val	Ser 90
Ser	Ala	Glu	Asp	Gly 95	Gln	Pro	Ala	Ile	Ser 100	Pro	Val	Asp	Ser	Gly 105
Arg	Ser	Asn	Arg	Thr 110	Arg	Ala	Arg	Pro	Phe 115	Glu	Arg	Ser	Thr	Ile 120
Arg	Ser	Arg	Ser	Phe 125	Lys	Lys	Ile	Asn	Arg 130	Ala	Leu	Ser	Val	Leu 135
Arg	Arg	Thr	Lys	Ser 140	Gly	Ser	Ala	Val	Ala 145	Asn	His	Ala	Asp	Gln 150
Gly	Arg	Glu	Asn	Ser 155	Glu	Asn	Thr	Thr	Ala 160	Pro	Glu	Val	Phe	Pro 165
Arg	Leu	Tyr	His	Leu 170	Ile	Pro	Asp	Gly	Glu 175	Ile	Thr	Ser	Ile	Lys 180
Ile	Asn	Arg	Val	Asp 185	Pro	Ser	Glu	Ser	Leu 190	Ser	Ile	Arg	Leu	Val 195
Gly	Gly	Ser	Glu	Thr 200	Pro	Leu	Val	His	Ile 205	Ile	Ile	Gln	His	Ile 210
Tyr	Arg	Asp	Gly	Val 215	Ile	Ala	Arg	Asp	Gly 220	Arg	Leu	Leu	Pro	Gly 225
Asp	Ile	Ile	Leu	Lys 230	Val	Asn	Gly	Met	Asp 235	Ile	Ser	Asn	Val	Pro 240
His	Asn	Tyr	Ala	Val 245	Arg	Leu	Leu	Arg	Gln 250	Pro	Cys	Gln	Val	Leu 255
Trp	Leu	Thr	Val	Met 260	Arg	Glu	Gln	Lys	Phe 265	Arg	Ser	Arg	Asn	Asn 270
Gly	Gln	Ala	Pro	Asp 275	Ala	Tyr	Arg	Pro	Arg 280	Asp	Asp	Ser	Phe	His 285
Val	Ile	Leu	Asn	Lys 290	Ser	Ser	Pro	Glu	Glu 295	Gln	Leu	Gly	Ile	Lys 300
Leu	Val	Arg	Lys	Val 305	Asp	Glu	Pro	Gly	Val 310	Phe	Ile	Phe	Asn	Val 315
Leu	Asp	Gly	Gly	Val	Ala	Tyr	Arg	His	Gly	Gln	Leu	Glu	Glu	Asn

	32	0			325					330
Asp Arg Val	Leu Ala 33	a Ile A 5	sn Gly	His	Asp 340	Leu	Arg	Tyr	Gly	Ser 345
Pro Glu Ser	Ala Ala 350	a His L )	eu Ile	Gln	Ala 355	Ser	Glu	Arg	Arg	Val 360
His Leu Val	. Val Sei 36	r Arg G	ln Val	Arg	Gln 370	Arg	Ser	Pro	Asp	Ile 375
Phe Gln Glu	Ala Gly 380	y Trp A	sn Ser	Asn	Gly 385	Ser	Trp	Ser	Pro	Gly 390
Pro Gly Glu	Arg Sei	Asn T	hr Pro	Lys	Pro 400	Leu	His	Pro	Thr	Ile 405
Thr Cys His	Glu Lys 410	s Val Va	al Asn	Ile	Gln 415	Lys	Asp	Pro	Gly	Glu 420
Ser Leu Gly	Met Thr 425	Val A	la Gly	Gly	Ala 430	Ser	His	Arg	Glu	Trp 435
Asp Leu Pro	Ile Tyr 440	Val I	Le Ser	Val	Glu 445	Pro	Gly	Gly	Val	Ile 450
Ser Arg Asp	Gly Arg 455	Ile Ly	ys Thr	Gly	Asp 460	Ile	Leu	Leu	Asn	Val 465
Asp Gly Val	Glu Leu 470	Thr G	lu Val	Ser	Arg 475	Ser	Glu	Ala	Val	Ala 480
Leu Leu Lys	Arg Thr 485	Ser Se	er Ser	Ile	Val 490	Leu	Lys	Ala	Leu	Glu 495
Val Lys Glu	Tyr Glu 500	Pro Gl	.n Glu	Asp	Cys 505	Ser	Ser	Pro	Ala	Ala 510
Leu Asp Ser	Asn His 515	Asn Me	et Ala		Pro 520	Ser	Asp	Trp	Ser	Pro 525
Ser Trp Val	Met Trp 530	Leu Gl	u Leu		Arg 535	Cys	Leu	Tyr	Asn	Cys 540
Lys Asp Ile	Val Leu 545	Arg Ar	g Asn		Ala 550	Gly	Ser	Leu	Gly	Phe 555
Cys Ile Val	Gly Gly 560	Tyr Gl	u Glu		Asn 565	Gly	Asn	Lys	Pro	Phe 570
Phe Ile Lys	Ser Ile 575	Val Gl	u Gly		Pro 1 580	Ala	Tyr	Asn	Asp	Gly 585
Arg Ile Arg	Cys Gly 590	Asp Il	e Leu		Ala ' 595	Val .	Asn	Gly	Arg	Ser 600
Thr Ser Gly	Met Ile 605	His Al	a Cys		Ala 1 610	Arg :	Leu :	Leu		Glu 615
Leu Lys Gly	Arg Ile 620	Thr Le	u Thr		Val 5 625	Ser '	Trp	Pro		Thr 630
Phe Leu										

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<210> 220
<211> 773
<212> DNA
<213> Homo sapiens
<400> 220
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<210> 221
<211> 184
<212> PRT
<213> Homo sapiens
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<400> 221

Met Lys Ile Leu Val Ala Phe Leu Val Val Leu Thr Ile Phe Gly 15

Ile Gln Ser His Gly Tyr Glu Val Phe Asn Ile Ile Ser Pro Ser 25

Asn Asn Gly Gly Asn Val Gln Glu Thr Val Thr Ile Asp Asn Glu 45

Lys Asn Thr Ala Ile Val Asn Ile His Ala Gly Ser Cys Ser 60

Thr Thr Ile Phe Asp Tyr Lys His Gly Tyr Ile Ala Ser Arg Val

Leu Ser Arg Arg Ala Cys Phe Ile Leu Lys Met Asp His Gln Asn 80 85 90

Ile Pro Pro Leu Asn Asn Leu Gln Trp Tyr Ile Tyr Glu Lys Gln 105

Ala Leu Asp Asn Met Phe Ser Asn Lys Tyr Thr Trp Val Lys Tyr 120

Asn Pro Leu Glu Ser Leu Ile Lys Asp Val Asp Trp Phe Leu Leu 135

Gly Ser Pro Ile Glu Lys Leu Cys Lys His Ile Pro Leu Tyr Lys 150

Gly Glu Val Val Glu Asn Thr His Asn Val Gly Ala Gly Gly Cys 165

Ala Lys Ala Gly Leu Leu Gly Ile Leu Gly Ile Leu Gly Ile Ser Ile Cys Ala 180

Asp Ile His Val

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<400> 222 ggcacgagcc aggaactagg aggttctcac tgcccgagca gaggccctac 50 acceaccgag gcatggggct ccctgggctg ttctgcttgg ccgtgctggc 100 tgccagcagc ttctccaagg cacgggagga agaaattacc cctgtggtct 150 ccattgccta caaagtcctg gaagttttcc ccaaaggccg ctgggtgctc 200 ataacctgct gtgcacccca gccaccaccg cccatcacct attccctctg 250 tggaaccaag aacatcaagg tggccaagaa ggtggtgaag acccacgagc 300 acctacttct gccgggcgtc ctccacctca ggtgcccatg tggacagtgc 400 caggetacag atgeactggg agetgtggte caagecagtg tetgagetge 450 gggccaactt cactctgcag gacagagggg caggccccag ggtggagatg 500 atctgccagg cgtcctcggg cagcccacct atcaccaaca gcctgatcgg 550 gaaggatggg caggtccacc tgcagcagag accatgccac aggcagcctg 600 ccaacttete ettectgeeg agecagaeat eggaetggtt etggtgeeag 650 gctgcaaaca acgccaatgt ccagcacagc gccctcacag tggtgccccc 700 aggtggtgac cagaagatgg aggactggca gggtcccctg gagagcccca 750 teettgeett geegetetae aggageaece geegtetgag tgaagaggag 800 tttggggggt tcaggatagg gaatggggag gtcagaggac gcaaagcagc 850 agccatgtag aatgaaccgt ccagagagcc aagcacggca gaggactgca 900

ggccatcagc gtgcactgtt cgtatttgga gttcatgcaa aatgagtgtg 950 ttttagctgc tcttgccaca aaaaaaaaaa aaaaaaaaa aa 992

<210> 223

<211> 265

<212> PRT

<213> Homo sapiens

<400> 223

Met Gly Leu Pro Gly Leu Phe Cys Leu Ala Val Leu Ala Ala Ser 1 10 15

Ser Phe Ser Lys Ala Arg Glu Glu Glu Ile Thr Pro Val Val Ser 20 25 30

Ile Ala Tyr Lys Val Leu Glu Val Phe Pro Lys Gly Arg Trp Val 35 40 45

Leu Ile Thr Cys Cys Ala Pro Gln Pro Pro Pro Ile Thr Tyr
50 55 60

Ser Leu Cys Gly Thr Lys Asn Ile Lys Val Ala Lys Lys Val Val 65 70 75

Lys Thr His Glu Pro Ala Ser Phe Asn Leu Asn Val Thr Leu Lys 80 85 90

Ser Ser Pro Asp Leu Leu Thr Tyr Phe Cys Arg Ala Ser Ser Thr 95 100 105

Ser Gly Ala His Val Asp Ser Ala Arg Leu Gln Met His Trp Glu 110 115 120

Leu Trp Ser Lys Pro Val Ser Glu Leu Arg Ala Asn Phe Thr Leu 125 130 135

Gln Asp Arg Gly Ala Gly Pro Arg Val Glu Met Ile Cys Gln Ala 140 145 150

Ser Ser Gly Ser Pro Pro Ile Thr Asn Ser Leu Ile Gly Lys Asp 155 160 165

Gly Gln Val His Leu Gln Gln Arg Pro Cys His Arg Gln Pro Ala 170 175 180

Asn Phe Ser Phe Leu Pro Ser Gln Thr Ser Asp Trp Phe Trp Cys 185 190 195

Gln Ala Ala Asn Asn Ala Asn Val Gln His Ser Ala Leu Thr Val 200 205 210

Val Pro Pro Gly Gly Asp Gln Lys Met Glu Asp Trp Gln Gly Pro 215 220 225

Leu Glu Ser Pro Ile Leu Ala Leu Pro Leu Tyr Arg Ser Thr Arg 230 235 240

Arg Leu Ser Glu Glu Glu Phe Gly Gly Phe Arg Ile Gly Asn Gly 245 250 255

Glu Val Arg Gly Arg Lys Ala Ala Met 260 265

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<sup>&</sup>lt;210> 225

<sup>&</sup>lt;211> 246

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<400>	> 225	5												
	_		Ala	Ala 5	Ala	Thr	Lys	Ile	Leu 10	Leu	Cys	Leu	Pro	Leu 15
Leu	Leu	Leu	Leu	Ser 20	Gly	Trp	Ser	Arg	Ala 25	Gly	Arg	Ala	Asp	Pro 30
His	Ser	Leu	Cys	Tyr 35	Asp	Ile	Thr	Val	Ile 40	Pro	Lys	Phe	Arg	Pro 45
Gly	Pro	Arg	Trp	Cys 50	Ala	Val	Gln	Gly	Gln 55	Val	Asp	Glu	Lys	Thr 60
Phe	Leu	His	Tyr	Asp 65	Cys	Gly	Asn	Lys	Thr 70	Val	Thr	Pro	Val	Ser 75
Pro	Leu	Gly	Lys	Lys 80	Leu	Asn	Val	Thr	Thr 85	Ala	Trp	Lys	Ala	Gln 90
Asn	Pro	Val	Leu	Arg 95	Glu	Val	Val	Asp	Ile 100	Leu	Thr	Glu	Gln	Leu 105
Arg	Asp	Ile	Gln	Leu 110	Glu	Asn	Tyr	Thr	Pro 115	Lys	Glu	Pro	Leu	Thr 120
Leu	Gln	Ala	Arg	Met 125	Ser	Cys	Glu	Gln	Lys 130	Ala	Glu	Gly	His	Ser 135
Ser	Gly	Ser	Trp	Gln 140	Phe	Ser	Phe	Asp	Gly 145	Gln	Ile	Phe	Leu	Leu 150
Phe	Asp	Ser	Glu	Lys 155	Arg	Met	Trp	Thr	Thr 160	Val	His	Pro	Gly	Ala 165
Arg	Lys	Met	Lys	Glu 170	Lys	Trp	Glu	Asn	Asp 175	Lys	Val	Val	Ala	Met 180
Ser	Phe	His	Tyr	Phe 185	Ser	Met	Gly	Asp	Cys 190	Ile	Gly	Trp	Leu	Glu 195
Asp	Phe	Leu	Met	Gly 200	Met	Asp	Ser	Thr	Leu 205	Glu	Pro	Ser	Ala	Gly 210
Ala	Pro	Leu	Ala	Met 215	Ser	Ser	Gly	Thr	Thr 220	Gln	Leu	Arg	Ala	Thr 225
Ala	Thr	Thr	Leu	Ile 230	Leu	Cys	Cys	Leu	Leu 235	Ile	Ile	Leu	Pro	Cys 240
Phe	Ile	Leu	Pro	Gly 245	Ile									

<210> 226

<211> 735

<212> DNA

<213> Homo sapiens

<400> 226

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tgctgctagc tgccttgggc ctcacaattt tcattctgtt ttctgacttt 100
caagttatat accgtggaat ggagttgatc ccaaccataa catcgtggag 150

ggttttaatt ttggtggtag ccctcaccca attctggtgt ggctttcttt 200 gcagaggatt ccaccttcaa aatcatgaac tctggctgtt gatcaaaaga 250 gaatttggat tctactctaa aagtcaatat aggacttggc aaaagaagct 300 agcagaagac tcaacctggc ctcccataaa caggacagat tattcaggtg 350 atggcaaaaa tggattctac atcaacggag gctatgaaag ccatgaacag 400 attccaaaaa gaaaactcaa attgggaggc caacccacag aacagcattt 450 ctgggccagg ctgtaatcag aattgtcgtc gtacatgctc aacagcattg 500 ctttttccc caaaattaac acattgtgga gaagtgatga tactctccc 550 ttaccttcc tctctccatt caagcattca aagtatattt tcaatgaatt 600 aaaccttgca gcaagggacc ttagataggc ttattctgac tgtatgctt 650 accaatgaga gaaaaaaaa caattacctt tcaataaact 700 gtattcattt tgaaaaaaaa aaaaaaaaa aaaaa 735

<210> 227 <211> 115 <212> PRT <213> Homo sapiens

<400> 227

Met Glu Leu Ile Pro Thr Ile Thr Ser Trp Arg Val Leu Ile Leu  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Val Val Ala Leu Thr Gln Phe Trp Cys Gly Phe Leu Cys Arg Gly 20 25 30

Phe His Leu Gln Asn His Glu Leu Trp Leu Leu Ile Lys Arg Glu 35 40 45

Phe Gly Phe Tyr Ser Lys Ser Gln Tyr Arg Thr Trp Gln Lys Lys 50 55 60

Leu Ala Glu Asp Ser Thr Trp Pro Pro Ile Asn Arg Thr Asp Tyr
65 70 75

Ser Gly Asp Gly Lys Asn Gly Phe Tyr Ile Asn Gly Gly Tyr Glu 80 85 90

Ser His Glu Gln Ile Pro Lys Arg Lys Leu Lys Leu Gly Gln 95 100 105

Pro Thr Glu Gln His Phe Trp Ala Arg Leu 110 115

<210> 228

<211> 2185

<212> DNA

<213> Homo sapiens

<400> 228

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<210> 229 <211> 653

<212> PRT

<213> Homo sapiens

<400> 229

Met Lys Leu Leu Trp Gln Val Thr Val His His His Thr Trp Asn  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Ala Ile Leu Leu Pro Phe Val Tyr Leu Thr Ala Gln Val Trp Ile 20 25 30

Leu Cys Ala Ala Ile Ala Ala Ala Ala Ser Ala Gly Pro Gln Asn 35 40 45

Cys Pro Ser Val Cys Ser Cys Ser Asn Gln Phe Ser Lys Val Val 50 55 60

Cys Thr Arg Arg Gly Leu Ser Glu Val Pro Gln Gly Ile Pro Ser
65 70 75

Asn Thr Arg Tyr Leu Asn Leu Met Glu Asn Asn Ile Gln Met Ile 80 85 90

Gln Ala Asp Thr Phe Arg His Leu His His Leu Glu Val Leu Gln 95 100 105

Leu Gly Arg Asn Ser Ile Arg Gln Ile Glu Val Gly Ala Phe Asn 110 115 120

Gly Leu Ala Ser Leu Asn Thr Leu Glu Leu Phe Asp Asn Trp Leu
125 130 135

Thr Val Ile Pro Ser Gly Ala Phe Glu Tyr Leu Ser Lys Leu Arg 140 145 150

Glu Leu Trp Leu Arg Asn Asn Pro Ile Glu Ser Ile Pro Ser Tyr 155 160 165

Ala Phe Asn Arg Val Pro Ser Leu Met Arg Leu Asp Leu Gly Glu 170 175 180

Leu Lys Lys Leu Glu Tyr Ile Ser Glu Gly Ala Phe Glu Gly Leu

				185					190					195
Phe	Asn	Leu	Lys	Tyr 200	Leu	Asn	Leu	Gly	Met 205	Cys	Asn	Ile	Lys	Asp 210
Met	Pro	Asn	Leu	Thr 215	Pro	Leu	Val	Gly	Leu 220	Glu	Glu	Leu	Glu	Met 225
Ser	Gly	Asn	His	Phe 230	Pro	Glu	Ile	Arg	Pro 235	Gly	Ser	Phe	His	Gly 240
Leu	Ser	Ser	Leu	Lys 245	Lys	Leu	Trp	Val	Met 250	Asn	Ser	Gln	Val	Ser 255
Leu	Ile	Glu	Arg	Asn 260	Ala	Phe	Asp	Gly	Leu 265	Ala	Ser	Leu	Val	Glu 270
Leu	Asn	Leu	Ala	His 275	Asn	Asn	Leu	Ser	Ser 280	Leu	Pro	His	Asp	Leu 285
Phe	Thr	Pro	Leu	Arg 290	Tyr	Leu	Val	Glu	Leu 295	His	Leu	His	His	Asn 300
Pro	Trp	Asn	Cys	Asp 305	Cys	Asp	Ile	Leu	Trp 310	Leu	Ala	Trp	Trp	Leu 315
Arg	Glu	Tyr	Ile	Pro 320	Thr	Asn	Ser	Thr	Cys 325	Cys	Gly	Arg	Cys	His 330
Ala	Pro	Met	His	Met 335	Arg	Gly	Arg	Tyr	Leu 340	Val	Glu	Val	Asp	Gln 345
Ala	Ser	Phe	Gln	Cys 350	Ser	Ala	Pro	Phe	Ile 355	Met	Asp	Ala	Pro	Arg 360
Asp	Leu	Asn	Ile	Ser 365	Glu	Gly	Arg	Met	Ala 370	Glu	Leu	Lys	Cys	Arg 375
Thr	Pro	Pro	Met	Ser 380	Ser	Val	Lys	Trp	Leu 385	Leu	Pro	Asn	Gly	Thr 390
Val	Leu	Ser	His	Ala 395	Ser	Arg	His	Pro	Arg 400	Ile	Ser	Val	Leu	Asn 405
Asp	Gly	Thr	Leu	Asn 410		Ser	His	Val	Leu 415	Leu	Ser	Asp	Thr	Gly 420
Val	Tyr	Thr	Cys	Met 425		Thr	Asn	Val	Ala 430	Gly	Asn	Ser	Asn	Ala 435
Ser	Ala	Tyr	Leu	Asn 440		Ser	Thr	Ala	Glu 445	Leu	Asn	Thr	Ser	Asn 450
Tyr	Ser	Phe	Phe	Thr 455		Val	Thr	Val	Glu 460	Thr	Thr	Glu	Ile	Ser 465
Pro	Glu	Asp	Thr	Thr 470		Lys	туг	Lys	Pro 475		Pro	Thr	Thr	Ser 480
Thr	Gly	Tyr	Gln	Pro 485		Tyr	Thr	Thr	Ser 490		Thr	· Val	Leu	11e 495
Gln	Thr	Thr	Arg	Val	Pro	Lys	Gln	val	Ala	Val	Pro	Ala	Thr	: Asp

				500					505					510
Thr	Thr	Asp	Lys	Met 515	Gln	Thr	Ser	Leu	Asp 520	Glu	Val	Met	Lys	Thr 525
Thr	Lys	Ile	Ile	Ile 530	Gly	Cys	Phe	Val	Ala 535	Val	Thr	Leu	Leu	Ala 540
Ala	Ala	Met	Leu	Ile 545	Val	Phe	Tyr	Lys	Leu 550	Arg	Lys	Arg	His	Gln 555
Gln	Arg	Ser	Thr	Val 560	Thr	Ala	Ala	Arg	Thr 565	Val	Glu	Ile	Ile	Gln 570
Val	Asp	Glu	Asp	Ile 575	Pro	Ala	Ala	Thr	Ser 580	Ala	Ala	Ala	Thr	Ala 585
Ala	Pro	Ser	Gly	Val 590	Ser	Gly	Glu	Gly	Ala 595	Val	Val	Leu	Pro	Thr 600
Ile	His	Asp	His	Ile 605	Asn	Tyr	Asn	Thr	Tyr 610	Lys	Pro	Ala	His	Gly 615
Ala	His	Trp	Thr	Glu 620	Asn	Ser	Leu	Gly	Asn 625	Ser	Leu	His	Pro	Thr 630
Val	Thr	Thr	Ile	Ser 635	Glu	Pro	Tyr	Ile	Ile 640	Gln	Thr	His	Thr	Lys 645
Asp	Lys	Val	Gln	Glu 650	Thr	Gln	Ile							

<210> 230 <211> 2846

<212> DNA

<213> Homo sapiens

<400> 230

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<210> 231

<211> 720

<212> PRT

<213> Homo sapiens

<400> 231

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Glu Ala Cys Pro Gly Ala Glu Trp Asn Ile Met Cys Arg Glu Cys
35 40 45

Cys Glu Tyr Asp Gln Ile Glu Cys Val Cys Pro Gly Lys Arg Glu
50 55 60

Val Val Gly Tyr Thr Ile Pro Cys Cys Arg Asn Glu Glu Asn Glu
65 70 75

Cys Asp Ser Cys Leu Ile His Pro Gly Cys Thr Ile Phe Glu Asn 80 85 90

Cys Lys Ser Cys Arg Asn Gly Ser Trp Gly Gly Thr Leu Asp Asp 95 100 105

Phe Tyr Val Lys Gly Phe Tyr Cys Ala Glu Cys Arg Ala Gly Trp 110 115 120

Tyr Gly Gly Asp Cys Met Arg Cys Gly Gln Val Leu Arg Ala Pro 125 130 135

Lys Gly Gln Ile Leu Leu Glu Ser Tyr Pro Leu Asn Ala His Cys 140 145 150

Glu Trp Thr Ile His Ala Lys Pro Gly Phe Val Ile Gln Leu Arg 155 160 165

Phe	Va]	. Met	Let	Ser 170	Leu	Glu	Phe	Asp	Tyr 175		Cys	Gln	Tyr	Asp 180
Tyr	Val	Glu	ı Val	Arc 185	Asp	Gly	' Asp	Asn	Arg 190	Asp	Gly	Gln	Ile	Ile 195
Lys	Arg	y Val	. Cys	Gly 200	Asn	Glu	Arg	Pro	Ala 205	Pro	Ile	Gln	Ser	Ile 210
Gly	Ser	Ser	Leu	His 215	Val	Leu	Phe	His	Ser 220	Asp	Gly	Ser	Lys	Asn 225
Phe	Asp	Gly	Phe	His 230	Ala	Ile	Tyr	Glu	Glu 235	Ile	Thr	Ala	Cys	Ser 240
Ser	Ser	Pro	Cys	Phe 245	His	Asp	Gly	Thr	Cys 250	Val	Leu	Asp	Lys	Ala 255
Gly	Ser	Tyr	Lys	Cys 260	Ala	Cys	Leu	Ala	Gly 265	Tyr	Thr	Gly	Gln	Arg 270
Cys	Glu	Asn	Leu	Leu 275	Glu	Glu	Arg	Asn	Cys 280	Ser	Asp	Pro	Gly	Gly 285
Pro	Val	Asn	Gly	Tyr 290	Gln	Lys	Ile	Thr	Gly 295	Gly	Pro	Gly	Leu	Ile 300
Asn	Gly	Arg	His	Ala 305	Lys	Ile	Gly	Thr	Val 310	Val	Ser	Phe	Phe	Cys 315
				320	Leu				325					330
				335	Ser				340					345
*				350	Ile				355					360
				365	Ser				370					375
				380	Lys				385					390
				395	Phe				400					405
				410	Gln				415					420
Arg				425					430					435
				440	Ser				445					450
Asn				455					460					465
Ala	Ala	Ile	Tyr	Arg 470	Arg	Thr	Ser	Gly	Val 475	His	Asp	Gly	Ser	Leu 480

His Lys Gly Ala Trp Phe Leu Val Cys Ser Gly Ala Leu Val Asn 485 Glu Arg Thr Val Val Val Ala Ala His Cys Val Thr Asp Leu Gly Lys Val Thr Met Ile Lys Thr Ala Asp Leu Lys Val Val Leu Gly 515 Lys Phe Tyr Arg Asp Asp Asp Arg Asp Glu Lys Thr Ile Gln Ser Leu Gln Ile Ser Ala Ile Ile Leu His Pro Asn Tyr Asp Pro Ile 545 Leu Leu Asp Ala Asp Ile Ala Ile Leu Lys Leu Leu Asp Lys Ala 560 Arg Ile Ser Thr Arg Val Gln Pro Ile Cys Leu Ala Ala Ser Arg 575 580 Asp Leu Ser Thr Ser Phe Gln Glu Ser His Ile Thr Val Ala Gly 590 Trp Asn Val Leu Ala Asp Val Arg Ser Pro Gly Phe Lys Asn Asp Thr Leu Arg Ser Gly Val Val Ser Val Val Asp Ser Leu Leu Cys 625 Glu Glu Gln His Glu Asp His Gly Ile Pro Val Ser Val Thr Asp Asn Met Phe Cys Ala Ser Trp Glu Pro Thr Ala Pro Ser Asp Ile 650 Cys Thr Ala Glu Thr Gly Gly Ile Ala Ala Val Ser Phe Pro Gly 670 Arg Ala Ser Pro Glu Pro Arg Trp His Leu Met Gly Leu Val Ser 680 685 Trp Ser Tyr Asp Lys Thr Cys Ser His Arg Leu Ser Thr Ala Phe 695 700 Thr Lys Val Leu Pro Phe Lys Asp Trp Ile Glu Arg Asn Met Lys 715

- <210> 232
- <211> 24
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe
- <400> 232
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- <210> 233
- <211> 24
- <212> DNA
- <213> Artificial Sequence

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<211> 50
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tggccagatc atcaagcgtg tctgtggcaa cqaqcqqcca gctcctatcc 50
<210> 235
<211> 1964
<212> DNA
<213> Homo sapiens
<400> 235
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caaattccga ttactgttgc tgttgacttt gtgcctgaca gtggttgggt 200
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acagtggata ttttgggggt gttactgccc taagcagaga gcagtttttc 850
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<210> 236
<211> 344
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<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;220>

<sup>&</sup>lt;221> Signal peptide

<sup>&</sup>lt;222> 1-27

<sup>&</sup>lt;223> Signal peptide

<sup>&</sup>lt;220>

<sup>&</sup>lt;221> N-glycosylation sites

<sup>&</sup>lt;222> 4-7, 220-223, 335-338

<sup>&</sup>lt;223> N-glycosylation sites

<sup>&</sup>lt;220>

<sup>&</sup>lt;221> Xylose isomerase proteins

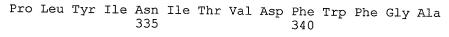
<sup>&</sup>lt;222> 191-201

<sup>&</sup>lt;223> Xylose isomerase proteins

<sup>&</sup>lt;400> 236

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Leu Leu Leu Thr Leu Cys Leu Thr Val Val Gly Trp Ala Thr Ser Asn Tyr Phe Val Gly Ala Ile Gln Glu Ile Pro Lys Ala Lys Glu Phe Met Ala Asn Phe His Lys Thr Leu Ile Leu Gly Lys Gly Lys Thr Leu Thr Asn Glu Ala Ser Thr Lys Lys Val Glu Leu Asp Asn Cys Pro Ser Val Ser Pro Tyr Leu Arg Gly Gln Ser Lys Leu Ile Phe Lys Pro Asp Leu Thr Leu Glu Glu Val Gln Ala Glu Asn Pro Lys Val Ser Arg Gly Arg Tyr Arg Pro Gln Glu Cys Lys Ala 110 115 Leu Gln Arg Val Ala Ile Leu Val Pro His Arg Asn Arg Glu Lys 125 His Leu Met Tyr Leu Leu Glu His Leu His Pro Phe Leu Gln Arg 145 Gln Gln Leu Asp Tyr Gly Ile Tyr Val Ile His Gln Ala Glu Gly 160 Lys Ly's Phe Asn Arg Ala Lys Leu Leu Asn Val Gly Tyr Leu Glu Ala Leu Lys Glu Glu Asn Trp Asp Cys Phe Ile Phe His Asp Val Asp Leu Val Pro Glu Asn Asp Phe Asn Leu Tyr Lys Cys Glu Glu 205 His Pro Lys His Leu Val Val Gly Arg Asn Ser Thr Gly Tyr Arg 215 220 Leu Arg Tyr Ser Gly Tyr Phe Gly Gly Val Thr Ala Leu Ser Arg Glu Gln Phe Phe Lys Val Asn Gly Phe Ser Asn Asn Tyr Trp Gly 250 Trp Gly Gly Glu Asp Asp Asp Leu Arg Leu Arg Val Glu Leu Gln 265 Arg Met Lys Ile Ser Arg Pro Leu Pro Glu Val Gly Lys Tyr Thr 275 Met Val Phe His Thr Arg Asp Lys Gly Asn Glu Val Asn Ala Glu 295 Arg Met Lys Leu Leu His Gln Val Ser Arg Val Trp Arg Thr Asp 310 Gly Leu Ser Ser Cys Ser Tyr Lys Leu Val Ser Val Glu His Asn 325



<210> 237

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 237

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<210> 238

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 238

gagetteate egttetgegt teace 25

<210> 239

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 239

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<210> 240

<211> 2567

<212> DNA

<213> Homo sapiens

<400> 240

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cegeatecte tggettgeet geeteetgee etgggeeeeg geaggggtgg 200

ccgcaggcct gtatgaactc aatctcacca ccgatagccc tgccaccacg 250

ggagcggtgg tgaccatctc ggccagcctg gtggccaagg acaacggcag 300

cctggccctg cccgctgacg cccacctcta ccgcttccac tggatccaca 350

ccccgctggt gcttactggc aagatggaga agggtctcag ctccaccatc 400

cgtgtggtcg gccacgtgcc cggggaattc ccggtctctg tctgggtcac 450

tgccgctgac tgctggatgt gccagcctgt ggccaggggc tttgtggtcc 500

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<210> 241 <211> 423

<212> PRT

<213> Homo sapiens

<400> 241

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Ala Cys Leu Leu Pro Trp Ala Pro Ala Gly Val Ala Ala Gly Leu 20 25 30

Tyr Glu Leu Asn Leu Thr Thr Asp Ser Pro Ala Thr Thr Gly Ala 35 40 45

Val Val Thr Ile Ser Ala Ser Leu Val Ala Lys Asp Asn Gly Ser 50 55 60

Leu Ala Leu Pro Ala Asp Ala His Leu Tyr Arg Phe His Trp Ile 65 70 75

His Thr Pro Leu Val Leu Thr Gly Lys Met Glu Lys Gly Leu Ser  $80 \\ \hspace{1.5cm} 85 \\ \hspace{1.5cm} 90$ 

Ser Thr Ile Arg Val Val Gly His Val Pro Gly Glu Phe Pro Val 95 100 105

Ser Val Trp Val Thr Ala Ala Asp Cys Trp Met Cys Gln Pro Val 110 115 120

Ala Arg Gly Phe Val Val Leu Pro Ile Thr Glu Phe Leu Val Gly 125 130 135

Asp Leu Val Val Thr Gln Asn Thr Ser Leu Pro Trp Pro Ser Ser 140 145 150

Tyr Leu Thr Lys Thr Val Leu Lys Val Ser Phe Leu Leu His Asp 155 160 160

Pro Ser Asn Phe Leu Lys Thr Ala Leu Phe Leu Tyr Ser Trp Asp 170 175 180

Phe Gly Asp Gly Thr Gln Met Val Thr Glu Asp Ser Val Val Tyr 185 190 195

Tyr Asn Tyr Ser Ile Ile Gly Thr Phe Thr Val Lys Leu Lys Val Val Ala Glu Trp Glu Glu Val Glu Pro Asp Ala Thr Arg Ala Val 215 Lys Gln Lys Thr Gly Asp Phe Ser Ala Ser Leu Lys Leu Gln Glu Thr Leu Arg Gly Ile Gln Val Leu Gly Pro Thr Leu Ile Gln Thr Phe Gln Lys Met Thr Val Thr Leu Asn Phe Leu Gly Ser Pro Pro Leu Thr Val Cys Trp Arg Leu Lys Pro Glu Cys Leu Pro Leu Glu Glu Gly Glu Cys His Pro Val Ser Val Ala Ser Thr Ala Tyr Asn 290 295 Leu Thr His Thr Phe Arg Asp Pro Gly Asp Tyr Cys Phe Ser Ile 305 Arg Ala Glu Asn Ile Ile Ser Lys Thr His Gln Tyr His Lys Ile 320 Gln Val Trp Pro Ser Arg Ile Gln Pro Ala Val Phe Ala Phe Pro 340 Cys Ala Thr Leu Ile Thr Val Met Leu Ala Phe Ile Met Tyr Met Thr Leu Arg Asn Ala Thr Gln Gln Lys Asp Met Val Glu Asn Pro 365 Glu Pro Pro Ser Gly Val Arg Cys Cys Cys Gln Met Cys Cys Gly 385 Pro Phe Leu Glu Thr Pro Ser Glu Tyr Leu Glu Ile Val Arg 395 Glu Asn His Gly Leu Leu Pro Pro Leu Tyr Lys Ser Val Lys Thr

Tyr Thr Val

- <210> 242
- <211> 26
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe

410

- <400> 242
- cattteetta ecetggacee agetee 26
- <210> 243
- <211> 25
- <212> DNA
- <213> Artificial Sequence

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<220>
<223> Synthetic oligonucleotide probe
<400> 243
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<210> 244
<211> 46
<212> DNA
<213> Artificial Sequence
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<400> 244
ccacgacccg agcaacttcc tcaagaccga cttgtttctc tacagc 46
<210> 245
<211> 485
<212> DNA
<213> Homo sapiens
<400> 245
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 ctgaccagtg gctctgtttt cccacaacag acgggacaac ttgcagagct 150
 gcaaccccag gacagagctg gagccagggc cagctggatg cccatgttcc 200
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acctgccctg cccccgtccc ctcccttcct tatttattcc tgctgcccca 350
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aaaaaaaaaa aaaaaaaaaa aaaaaa 485
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<211> 84
<212> PRT
<213> Homo sapiens
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                                   2.5
Thr Gly Gln Leu Ala Glu Leu Gln Pro Gln Asp Arg Ala Gly Ala
Arg Ala Ser Trp Met Pro Met Phe Gln Arg Arg Arg Arg Asp
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<210> 247 <211> 2359

<212> DNA

<213> Homo sapiens

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<210> 248

<211> 456

<212> PRT

<213> Homo sapiens

## <400> 248

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Gly Ile Ser Leu Thr Val Leu Phe Thr Leu Leu Val Phe Ile 20 25 30

Ile Val Pro Ala Ile Phe Gly Val Ser Phe Gly Ile Arg Lys Leu 35 40 45

Tyr Met Lys Ser Leu Leu Lys Ile Phe Ala Trp Ala Thr Leu Arg 50 55 60

Met Glu Arg Gly Ala Lys Glu Lys Asn His Gln Leu Tyr Lys Pro 65 70 75

Tyr Thr Asn Gly Ile Ile Ala Lys Asp Pro Thr Ser Leu Glu Glu Glu Ile Lys Glu Ile Arg Arg Ser Gly Ser Ser Lys Ala Leu Asp 95 Asn Thr Pro Glu Phe Glu Leu Ser Asp Ile Phe Tyr Phe Cys Arg 115 Lys Gly Met Glu Thr Ile Met Asp Asp Glu Val Thr Lys Arg Phe 135 Ser Ala Glu Glu Leu Glu Ser Trp Asn Leu Leu Ser Arg Thr Asn Tyr Asn Phe Gln Tyr Ile Ser Leu Arg Leu Thr Val Leu Trp Gly 155 160 Leu Gly Val Leu Ile Arg Tyr Cys Phe Leu Leu Pro Leu Arg Ile 170 175 Ala Leu Ala Phe Thr Gly Ile Ser Leu Leu Val Val Gly Thr Thr 190 Val Val Gly Tyr Leu Pro Asn Gly Arg Phe Lys Glu Phe Met Ser 200 Lys His Val His Leu Met Cys Tyr Arg Ile Cys Val Arg Ala Leu 220 Thr Ala Ile Ile Thr Tyr His Asp Arg Glu Asn Arg Pro Arg Asn 235 Gly Gly Ile Cys Val Ala Asn His Thr Ser Pro Ile Asp Val Ile 245 Ile Leu Ala Ser Asp Gly Tyr Tyr Ala Met Val Gly Gln Val His 265 Gly Gly Leu Met Gly Val Ile Gln Arg Ala Met Val Lys Ala Cys 280 Pro His Val Trp Phe Glu Arg Ser Glu Val Lys Asp Arg His Leu 295 Val Ala Lys Arg Leu Thr Glu His Val Gln Asp Lys Ser Lys Leu Pro Ile Leu Ile Phe Pro Glu Gly Thr Cys Ile Asn Asn Thr Ser 320 Val Met Met Phe Lys Lys Gly Ser Phe Glu Ile Gly Ala Thr Val 340 Tyr Pro Val Ala Ile Lys Tyr Asp Pro Gln Phe Gly Asp Ala Phe 355 Trp Asn Ser Ser Lys Tyr Gly Met Val Thr Tyr Leu Leu Arg Met 370 Met Thr Ser Trp Ala Ile Val Cys Ser Val Trp Tyr Leu Pro Pro 385

Met Thr Arg Glu Ala Asp Glu Asp Ala Val Gln Phe Ala Asn Arg Val Lys Ser Ala Ile Ala Arg Gln Gly Gly Leu Val Asp Leu Leu 410 Trp Asp Gly Gly Leu Lys Arg Glu Lys Val Lys Asp Thr Phe Lys 435 Glu Glu Gln Gln Lys Leu Tyr Ser Lys Met Ile Val Gly Asn His Lys Asp Arg Ser Arg Ser

<210> 249 <211> 1103 <212> DNA <213> Homo sapiens

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gacatggagt tttattgagg tagctacgtg attaaatggt attgcagtgt 1100
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<210> 250

<211> 240

<212> PRT

<213> Homo sapiens

<400> 250

Met Ala Leu Ala Ala Leu Met Ile Ala Leu Gly Ser Leu Gly Leu
1 5 10 15

His Thr Trp Gln Ala Gln Ala Val Pro Thr Ile Leu Pro Leu Gly 20 25 30

Leu Ala Pro Asp Thr Phe Asp Asp Thr Tyr Val Gly Cys Ala Glu
35 40 45

Glu Met Glu Glu Lys Ala Ala Pro Leu Leu Lys Glu Glu Met Ala 50 55 60

His His Ala Leu Leu Arg Glu Ser Trp Glu Ala Ala Gln Glu Thr
65 70 75

Trp Glu Asp Lys Arg Arg Gly Leu Thr Leu Pro Pro Gly Phe Lys
80 85 90

Ala Gln Asn Gly Ile Ala Ile Met Val Tyr Thr Asn Ser Ser Asn  $95 \hspace{1.5cm} 100 \hspace{1.5cm} 105$ 

Thr Leu Tyr Trp Glu Leu Asn Gln Ala Val Arg Thr Gly Gly Gly 110 115

Ser Arg Glu Leu Tyr Met Arg His Phe Pro Phe Lys Ala Leu His 125 130 135

Phe Tyr Leu Ile Arg Ala Leu Gln Leu Leu Arg Gly Ser Gly Gly 140 145 150

Cys Ser Arg Gly Pro Gly Glu Val Val Phe Arg Gly Val Gly Ser 155 160 165

Leu Arg Phe Glu Pro Lys Arg Leu Gly Asp Ser Val Arg Leu Gly 170 175 180

Gln Phe Ala Ser Ser Ser Leu Asp Lys Ala Val Ala His Arg Phe 185 190 195

Gly Glu Lys Arg Arg Gly Cys Val Ser Ala Pro Gly Val Gln Leu

Gly Ser Gln Ser Glu Gly Ala Ser Ser Leu Pro Pro Trp Lys Thr 215 220 225

<210> 251

<211> 50

<212> DNA

<213> Artificial Sequence

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<220>
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<210> 252
<211> 1076
<212> DNA
<213> Homo sapiens
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caacatgeet caeceteate tatateettt ggeageteae agggteagea 100
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 tttccccctg aagtccaaag taaagcaagt tgactctatt gtctggacct 200
 tcaacacaac ccctcttgtc accatacagc cagaaggggg cactatcata 250
 gtgacccaaa atcgtaatag ggagagagta gacttcccag atggaggcta 300
 ctccctgaag ctcagcaaac tgaagaagaa tgactcaggg atctactatg 350
 tggggatata cagctcatca ctccagcagc cctccaccca ggagtacgtg 400
 ctgcatgtct acgagcacct gtcaaagcct aaagtcacca tgggtctgca 450
 gagcaataag aatggcacct gtgtgaccaa tctgacatgc tgcatggaac 500
 atggggaaga ggatgtgatt tatacctgga aggccctggg gcaagcagcc 550
 aatgagtccc ataatgggtc catcctcccc atctcctgga gatggggaga 600
 aagtgatatg accttcatct gcgttgccag gaaccctgtc agcagaaact 650
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 cagtetettt gtactgggge tatttetttg gtttetgaag agagagagae 800
 aagaagagta cattgaagag aagaagagag tggacatttg tcgggaaact 850
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atgccagaca caccaaggct atttgcctat gagaatgtta tctagacagc 1050
agtgcactcc cctaagtctc tgctca 1076
<210> 253
<211> 335
<212> PRT
<213> Homo sapiens
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Met Ala Gly Ser Pro Thr Cys Leu Thr Leu Ile Tyr Ile Leu Trp

1 10 15 Gln Leu Thr Gly Ser Ala Ala Ser Gly Pro Val Lys Glu Leu Val Gly Ser Val Gly Gly Ala Val Thr Phe Pro Leu Lys Ser Lys Val Lys Gln Val Asp Ser Ile Val Trp Thr Phe Asn Thr Thr Pro Leu Val Thr Ile Gln Pro Glu Gly Gly Thr Ile Ile Val Thr Gln Asn Arg Asn Arg Glu Arg Val Asp Phe Pro Asp Gly Gly Tyr Ser Leu Lys Leu Ser Lys Leu Lys Lys Asn Asp Ser Gly Ile Tyr Tyr Val 100 Gly Ile Tyr Ser Ser Ser Leu Gln Gln Pro Ser Thr Gln Glu Tyr 110 115 Val Leu His Val Tyr Glu His Leu Ser Lys Pro Lys Val Thr Met Gly Leu Gln Ser Asn Lys Asn Gly Thr Cys Val Thr Asn Leu Thr Cys Cys Met Glu His Gly Glu Glu Asp Val Ile Tyr Thr Trp Lys Ala Leu Gly Gln Ala Ala Asn Glu Ser His Asn Gly Ser Ile Leu 170 Pro Ile Ser Trp Arg Trp Gly Glu Ser Asp Met Thr Phe Ile Cys 185 190 Val Ala Arg Asn Pro Val Ser Arg Asn Phe Ser Ser Pro Ile Leu 205 200 Ala Arg Lys Leu Cys Glu Gly Ala Ala Asp Asp Pro Asp Ser Ser 215 Met Val Leu Leu Cys Leu Leu Leu Val Pro Leu Leu Ser Leu 235 Phe Val Leu Gly Leu Phe Leu Trp Phe Leu Lys Arg Glu Arg Gln Glu Glu Tyr Ile Glu Glu Lys Lys Arg Val Asp Ile Cys Arg Glu 260 265 Thr Pro Asn Ile Cys Pro His Ser Gly Glu Asn Thr Glu Tyr Asp Thr Ile Pro His Thr Asn Arg Thr Ile Leu Lys Glu Asp Pro Ala 290 Asn Thr Val Tyr Ser Thr Val Glu Ile Pro Lys Lys Met Glu Asn 305 310 Pro His Ser Leu Leu Thr Met Pro Asp Thr Pro Arg Leu Phe Ala

320 325 330

Tyr Glu Asn Val Ile 335

<210> 254

<211> 1053

<212> DNA

<213> Homo sapiens

<400> 254

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<210> 255

aaa 1053

<211> 860

<212> DNA

<213> Homo sapiens

<400> 255

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gatgctgctg ctgctgtgtt tgggactgac cctagtctgt gtccatgcag 100 aagaagctag ttctacggga aggaacttta atgtagaaaa gattaatggg 150 gaatggcata ctattatcct ggcctctgac aaaagagaaa agatagaaga 200 acatggcaac tttagacttt ttctggagca aatccatgtc ttggagaatt 250 ccttagttct taaagtccat actgtaagag atgaagagtg ctccgaatta 300 tctatggttg ctgacaaaac agaaaaggct ggtgaatatt ctgtgacgta 350 tgatggattc aatacattta ctatacctaa gacagactat gataactttc 400 ttatggctca cctcattaac gaaaaggatg gggaaacctt ccaqctgatg 450 gggctctatg gccgagaacc agatttgagt tcagacatca aggaaaggtt 500 tgcacaacta tgtgaggagc atggaatcct tagagaaaat atcattgacc 550 tatecaatge caategetge etceaggece gagaatgaag aatggeetga 600 gcctccagtg ttgagtggac acttctcacc aggactccac catcatccct 650 tectatecat acageatece cagtataaat tetgtgatet geattecate 700 ctgtctcact gagaagtcca attccagtct atcaacatgt tacctaggat 750 acctcatcaa gaatcaaaga cttctttaaa tttctctttg atacaccctt 800 gacaattttt catgaaatta ttcctcttcc tgttcaataa atgattaccc 850 ttgcacttaa 860

<210> 256 <211> 180 <212> PRT

<213> Homo sapiens

<400> 256

Met Lys Met Leu Leu Leu Cys Leu Gly Leu Thr Leu Val Cys 1 5 10 15

Val His Ala Glu Glu Ala Ser Ser Thr Gly Arg Asn Phe Asn Val 20 25 30

Glu Lys Ile Asn Gly Glu Trp His Thr Ile Ile Leu Ala Ser Asp 35 40 45

Lys Arg Glu Lys Ile Glu Glu His Gly Asn Phe Arg Leu Phe Leu 50 55 60

Glu Gln Ile His Val Leu Glu Asn Ser Leu Val Leu Lys Val His
65 70 75

Thr Val Arg Asp Glu Glu Cys Ser Glu Leu Ser Met Val Ala Asp 80 85 90

Lys Thr Glu Lys Ala Gly Glu Tyr Ser Val Thr Tyr Asp Gly Phe 95 100 105

Asn Thr Phe Thr Ile Pro Lys Thr Asp Tyr Asp Asn Phe Leu Met 110 115 120

Ala His Leu Ile Asn Glu Lys Asp Gly Glu Thr Phe Gln Leu Met 125  $\phantom{\bigg|}$  130  $\phantom{\bigg|}$  135

Gly Leu Tyr Gly Arg Glu Pro Asp Leu Ser Ser Asp Ile Lys Glu 140 145 150

Arg Phe Ala Gln Leu Cys Glu Glu His Gly Ile Leu Arg Glu Asn 155 160 165

Ile Ile Asp Leu Ser Asn Ala Asn Arg Cys Leu Gln Ala Arg Glu 170 175 180

<210> 257

<211> 766

<212> DNA

<213> Homo sapiens

<400> 257

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<210> 258

<211> 229

<212> PRT

<213> Homo sapiens

gtttgaaaaa aaaaaa 766

<400> 258

Met Thr Cys Cys Glu Gly Trp Thr Ser Cys Asn Gly Phe Ser Leu  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Leu Val Leu Leu Leu Gly Val Val Leu Asn Ala Ile Pro Leu 20 25 30

Ile Val Ser Leu Val Glu Glu Asp Gln Phe Ser Gln Asn Pro Ile

40 45 Ser Cys Phe Glu Trp Trp Phe Pro Gly Ile Ile Gly Ala Gly Leu 50 Met Ala Ile Pro Ala Thr Thr Met Ser Leu Thr Ala Arg Lys Arg Ala Cys Cys Asn Asn Arq Thr Gly Met Phe Leu Ser Ser Phe Phe Ser Val Ile Thr Val Ile Gly Ala Leu Tyr Cys Met Leu Ile Ser Ile Gln Ala Leu Leu Lys Gly Pro Leu Met Cys Asn Ser Pro Ser 110 115 Asn Ser Asn Ala Asn Cys Glu Phe Ser Leu Lys Asn Ile Ser Asp 130 Ile His Pro Glu Ser Phe Asn Leu Gln Trp Phe Phe Asn Asp Ser 140 Cys Ala Pro Pro Thr Gly Phe Asn Lys Pro Thr Ser Asn Asp Thr 155 Met Ala Ser Gly Trp Arg Ala Ser Ser Phe His Phe Asp Ser Glu 170 175 180 Glu Asn Lys His Arg Leu Ile His Phe Ser Val Phe Leu Gly Leu Leu Leu Val Gly Ile Leu Glu Val Leu Phe Gly Leu Ser Gln Ile 200 Val Ile Gly Phe Leu Gly Cys Leu Cys Gly Val Ser Lys Arg Arg 220 Ser Gln Ile Val

<210> 259

<211> 434

<212> DNA

<213> Homo sapiens

<400> 259

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<210> 260
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<211> 83

<212> PRT

<213> Homo sapiens

### <400> 260

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Cys Tyr Gln Ala His Ala Leu Val Cys Pro Ala Val Ala Ser Glu 20 25 30

Ile Thr Val Phe Leu Phe Leu Ser Asp Ala Ala Val Asn Leu Gln 35 40 45

Val Ala Lys Leu Asn Pro Pro Pro Glu Ala Leu Ala Ala Lys Leu
50 55 60

Glu Val Lys His Cys Thr Asp Gln Ile Ser Phe Lys Lys Arg Leu 65 70 75

Ser Leu Lys Lys Ser Trp Trp Lys

<210> 261

<211> 636

<212> DNA

<213> Homo sapiens

#### <400> 261

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<sup>&</sup>lt;210> 262

<sup>&</sup>lt;211> 89

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

bys Ald lie Pro Leu lie Thr Pro Gly Ser Ald Thr Thr Cys
80 85

<210> 263 <211> 1676 <212> DNA <213> Homo sapiens

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ctgagcaagg atgaagatgg gaaggcattg tcagatgagg atataagagg 1000
agaaggctgac accttcatgt ttggaggca tgacaccacg gccagtggcc 1050
tctcctgggt cctgtacaac cttgcgaggc acccagaata ccaggagcgc 1100
tgccgacagg aggtgcaaga gcttctgaag gaccgcgatc ctaaagagat 1150
tgaatgggac gacctggccc agctgccctt cctgaccatg tgcgtgaagg 1200
agaagcctgag gttacatccc ccagctccct tcatctcccg atgctgcacc 1250
caggacattg ttctcccaga tggccgagtc acccaaaag gcattacctg 1300
cctcatcgat attatagggg tccatcacaa cccaactgtg tggccggatc 1350
ctgaggtcta cgacccttc cgctttgacc cagagaacag caaggggagg 1400
tcacctctgg ctttattcc ttctccgca gggcccagga actgcatcgg 1450
gcaggcgttc gccatggcg agatgaaagt ggtcctggcg ttgatgctgc 1500
tgcacttccg gttcctgcca gaccacactg agccccgcag gaagctggaa 1550
ttgatcatgc gcgccgaggg cgggctttg ctgcgggtgg agcccctgaa 1600
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gtcatgaata aaacggtgct gtcaaa 1676

<210> 264

<211> 524

<212> PRT

<213> Homo sapiens

<400> 264

Met Ser Leu Leu Ser Leu Pro Trp Leu Gly Leu Arg Pro Val Ala  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Met Ser Pro Trp Leu Leu Leu Leu Val Val Gly Ser Trp Leu 20 25 30

Leu Ala Arg Ile Leu Ala Trp Thr Tyr Ala Phe Tyr Asn Asn Cys 35 40 45

Arg Arg Leu Gln Cys Phe Pro Gln Pro Pro Lys Arg Asn Trp Phe 50 55 60

Trp Gly His Leu Gly Leu Ile Thr Pro Thr Glu Glu Gly Leu Lys
65 70 75

Asp Ser Thr Gln Met Ser Ala Thr Tyr Ser Gln Gly Phe Thr Val  $80 \\ 85 \\ 90$ 

Trp Leu Gly Pro Ile Ile Pro Phe Ile Val Leu Cys His Pro Asp 95 100 105

Thr Ile Arg Ser Ile Thr Asn Ala Ser Ala Ala Ile Ala Pro Lys 110 115 120

Asp Asn Leu Phe Ile Arg Phe Leu Lys Pro Trp Leu Gly Glu Gly 125 130 135

Ile Leu Leu Ser Gly Gly Asp Lys Trp Ser Arg His Arg Arg Met 140 Leu Thr Pro Ala Phe His Phe Asn Ile Leu Lys Ser Tyr Ile Thr 155 160 Ile Phe Asn Lys Ser Ala Asn Ile Met Leu Asp Lys Trp Gln His 175 Leu Ala Ser Glu Gly Ser Ser Arg Leu Asp Met Phe Glu His Ile 185 Ser Leu Met Thr Leu Asp Ser Leu Gln Lys Cys Ile Phe Ser Phe 200 Asp Ser His Cys Gln Glu Arg Pro Ser Glu Tyr Ile Ala Thr Ile 215 220 Leu Glu Leu Ser Ala Leu Val Glu Lys Arg Ser Gln His Ile Leu 230 235 Gln His Met Asp Phe Leu Tyr Tyr Leu Ser His Asp Gly Arg Arg 250 Phe His Arg Ala Cys Arg Leu Val His Asp Phe Thr Asp Ala Val 260 265 Ile Arg Glu Arg Arg Thr Leu Pro Thr Gln Gly Ile Asp Asp Phe Phe Lys Asp Lys Ala Lys Ser Lys Thr Leu Asp Phe Ile Asp Val Leu Leu Ser Lys Asp Glu Asp Gly Lys Ala Leu Ser Asp 305 310 Glu Asp Ile Arg Ala Glu Ala Asp Thr Phe Met Phe Gly Gly His 320 Asp Thr Thr Ala Ser Gly Leu Ser Trp Val Leu Tyr Asn Leu Ala 340 Arg His Pro Glu Tyr Gln Glu Arg Cys Arg Gln Glu Val Gln Glu 355 Leu Leu Lys Asp Arg Asp Pro Lys Glu Ile Glu Trp Asp Asp Leu Ala Gln Leu Pro Phe Leu Thr Met Cys Val Lys Glu Ser Leu Arg 380 Leu His Pro Pro Ala Pro Phe Ile Ser Arg Cys Cys Thr Gln Asp Ile Val Leu Pro Asp Gly Arg Val Ile Pro Lys Gly Ile Thr Cys Leu Ile Asp Ile Ile Gly Val His His Asn Pro Thr Val Trp Pro 430 Asp Pro Glu Val Tyr Asp Pro Phe Arg Phe Asp Pro Glu Asn Ser 445

Lys Gly Arg Ser Pro Leu Ala Phe Ile Pro Phe Ser Ala Gly Pro 465

Arg Asn Cys Ile Gly Gln Ala Phe Ala Met Ala Glu Met Lys Val 470

Val Leu Ala Leu Met Leu Leu His Phe Arg Phe Leu Pro Asp His 485

Thr Glu Pro Arg Arg Lys Leu Glu Leu Ile Met Arg Ala Glu Gly 500

Gly Leu Trp Leu Arg Val Glu Pro Leu Asn Val Gly Leu Gln 515

<210> 265
<211> 584
<212> DNA

<212> DNA <213> Homo sapiens

<400> 265

caacagaagc caagaaggaa gccgtctatc ttgtggcgat catgtataag 50 ctggcctcct gctgtttgct tttcacagga ttcttaaatc ctctcttatc 100 tcttcctctc cttgactcca gggaaatatc ctttcaactc tcagcacctc 150 atgaagacgc gcgcttaact ccggaggagc tagaaagagc ttcccttcta 200 cagatattgc cagagatgct gggtgcagaa agaggggata ttctcaggaa 250 agcagactca agtaccaaca tttttaaccc aagaggaaat ttgagaaagt 300 ttcaggattt ctctggacaa gatcctaaca ttttactgag tcatctttg 350 gccagaatct ggaaaccata caagaaacgt gagactcctg attgcttctg 400 gaaatactgt gtctgaagtg aaataagcat ctgttagtca gctcagaaac 450 acccatctta gaatatgaaa aataacacaa tgcttgattt gaaaacagtg 500 tggagaaaaa ctaggcaaac tacaccctgt tcattgttac ctggaaaata 550 aatcctctat gttttgcaca aaaaaaaaaa aaaa 584

<210> 266 <211> 124

<212> PRT

<213> Homo sapiens

<400> 266

Met Tyr Lys Leu Ala Ser Cys Cys Leu Leu Phe Thr Gly Phe Leu
1 5 10 15

Asn Pro Leu Leu Ser Leu Pro Leu Leu Asp Ser Arg Glu Ile Ser 20 25 30

Phe Gln Leu Ser Ala Pro His Glu Asp Ala Arg Leu Thr Pro Glu 35 40 45

Glu Leu Glu Arg Ala Ser Leu Leu Gln Ile Leu Pro Glu Met Leu
50 55 60

Gly Ala Glu Arg Gly Asp Ile Leu Arg Lys Ala Asp Ser Ser Thr 65 70 75

Asn Ile Phe Asn Pro Arg Gly Asn Leu Arg Lys Phe Gln Asp Phe 80 85 90

Ser Gly Gln Asp Pro Asn Ile Leu Leu Ser His Leu Leu Ala Arg 95 100 105

Ile Trp Lys Pro Tyr Lys Lys Arg Glu Thr Pro Asp Cys Phe Trp 110 115 120

Lys Tyr Cys Val

<210> 267

<211> 654

<212> DNA

<213> Homo sapiens

<400> 267

gaacatttt agttccaag gaatgtacat cagcccacg gaagctaggc 50 cacctctggg atgggttgc tggtttaaaa caaacgccag tcatcctata 100 taaggacctg acagccacca ggcaccacct ccgccaggaa ctgcaggccc 150 acctgtctgc aacccagctg aggccatgcc ctccccaggg accgtctgca 200 gcctcctgct cctcggcatg ctctggctgg acttggccat ggcaggctcc 250 agcttcctga gccctgaaca ccaggaggtc cagcaggaaa aggagtcgaa 300 gaagccacca gccaagctgc agccccgagc tctagcaggc tggctccgcc 350 cggaagatgg aggtcaagca gaaggggcag aggatgaact ggaagtccgg 400 ttcaacgccc cctttgatgt tggaatcaag ctgtcagggg ttcagtacca 450 gcagcacaagc caggccctgg ggaagtttct tcaggacatc ctctgggaag 500 aggccaaaga ggcccaagc gccaagtgat cgcccacaag ccttactcac 550 ctctctctaa gtttagaagc gctcatctgg cttttcgctt gcttctgcag 600 caactcccac gactgttgta caagctcagg aggcgaataa atgttcaaac 650

tgta 654 <210> 268

<211> 117

<212> PRT

<213> Homo sapiens

<400> 268

Met Pro Ser Pro Gly Thr Val Cys Ser Leu Leu Leu Gly Met  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Leu Trp Leu Asp Leu Ala Met Ala Gly Ser Ser Phe Leu Ser Pro  $20 \\ 25 \\ 30$ 

Glu His Gln Arg Val Gln Gln Arg Lys Glu Ser Lys Lys Pro Pro
35 40 45

Ala Lys Leu Gln Pro Arg Ala Leu Ala Gly Trp Leu Arg Pro Glu

Asp Gly Gly Gln Ala Glu Gly Ala Glu Asp Glu Leu Glu Val Arg

Phe Asn Ala Pro Phe Asp Val Gly Ile Lys Leu Ser Gly Val Gln

Tyr Gln Gln His Ser Gln Ala Leu Gly Lys Phe Leu Gln Asp Ile

Leu Trp Glu Glu Ala Lys Glu Ala Pro Ala Asp Lys

<210> 269

<211> 1332

<212> DNA

<213> Homo sapiens

<400> 269

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aggccagccc ccaagaatgc cctgctcctg acagcttggc caacccctgg 1000 tcagggcaga gggagttggg tgggtcaggc tctgggctca cctccatctc 1050 cagagcatcc cctgcctgca gttgtggcaa gaacgcccag ctcagaatga 1100
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accactgtcc ccacacaacc ctggggatgt tttaaaacac acacctctaa 1200
cgcatatctt acagtcactg ttgtcttgcc tgagggttga attttttta 1250
atgaaagtgc aatgaaaatc actggattaa atcctacgga cacagagctg 1300
aaaaaaaaaa aaaaaaaaa aaaaaaaaa aa 1332

<210> 270

<211> 142

<212> PRT

<213> Homo sapiens

<400> 270

Met Asn Thr Trp Leu Leu Phe Leu Pro Leu Phe Pro Val Gln Val 1 5 10 15

Gln Thr Leu Ile Val Val Ile Ile Gly Met Leu Val Leu Leu 20 25 30

Asp Phe Leu Gly Leu Val His Leu Gly Gln Leu Leu Ile Phe His  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Ile Tyr Leu Ser Met Ser Pro Thr Leu Ser Pro Arg Ser Pro Gln
50 55 60

Gly Trp Val Val Arg Ala Ala His Leu Thr Pro Leu Leu Glu Tyr
65 70 70

Val Pro Asn Pro Glu Pro Pro Thr Pro Gly Ala Arg Val Phe Val 80 85 90

Pro Arg Val Arg Met Cys Ser Gly Ser Ala Ser Pro Arg Ser Glu 95 100 105

Ile Met Asp Lys Lys Gly Lys Ser Gln Glu Glu Ile Lys Ser Met 110 115 120

Arg Thr Gln Gln Ala Gln Gln Glu Ala Glu Leu Thr Pro Arg Pro 125 130 135

Ala Gly Val Val Pro Gly Ala

<210> 271

<211> 1484

<212> DNA

<213> Homo sapiens

<400> 271

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tggagatacc aacacatcca cccaggaggt ggtacaatac aactgggaga 300 ctggggatga ccggttctcc ttccggagct tccggagtgg catgtggcta 350 tcctgtgagg aaactgtgga agaaccaggg gagaggtgcc gaagtttcat 400 tgaacttaca ccaccagcca agagaggtga gaaaggacta ctggaatttg 450 ccacgttgca aggcccatgt caccccactc tccgatttgg agggaagcgg 500 ttgatggaga aggetteeet eeetteeet eeettgggge tttgtggeaa 550 aaatcctatg gttatccctg ggaacgcaga tcacctacat cggacttcaa 600 ttcatcagct tcctcctgct actaacagac ttgctactca ctgggaaccc 650 tgcctgtggg ctcaaactga gcgcctttgc tgctgtttcc tctgtcctgt 700 caggitetect ggggatggtg geceacatga tgtatteaca agtetteeaa 750 gcgactgtca acttgggtcc agaagactgg agaccacatg tttggaatta 800 tggctgggcc ttctacatgg cctggctctc cttcacctgc tgcatggcgt 850 cggctgtcac caccttcaac acgtacacca ggatggtgct ggagttcaag 900 tgcaagcata gtaagagctt caaggaaaac ccgaactgcc taccacatca 950 ccatcagtgt ttccctcggc ggctgtcaag tgcagccccc accgtgggtc 1000 ctttgaccag ctaccaccag tatcataatc agcccatcca ctctgtctct 1050 gagggagtcg acttctactc cgagctgcgg aacaagggat ttcaaagagg 1100 ggccagccag gagctgaaag aagcagttag gtcatctgta gaggaagagc 1150 agtgttagga gttaagcggg tttggggagt aggcttgagc cctaccttac 1200 acgtctgctg attatcaaca tgtgcttaag ccaacatccg tctcttgagc 1250 atggttttta gaggctacga ataaggctat gaataagggt tatctttaag 1300 tcctaaggga ttcctgggtg ccactgctct cttttcctct acagctccat 1350 cttgtttcac ccaccccaca tctcacacat ccagaattcc cttctttact 1400 gatagtttct gtgccaggtt ctgggctaaa ccatggagat aaaaagaaga 1450 gtaaaataca cttcccgacc ttaaggatct gaaa 1484

<210> 272

<211> 285

<212> PRT

<213> Homo sapiens

<400> 272

Met Ala Lys Met Glu Leu Ser Lys Ala Phe Ser Gly Gln Arg Thr 1 5 10 15

Leu Leu Ser Ala Ile Leu Ser Met Leu Ser Leu Ser Phe Ser Thr 20 25 30

Thr Ser Leu Leu Ser Asn Tyr Trp Phe Val Gly Thr Gln Lys Val

40 45 Pro Lys Pro Leu Cys Glu Lys Gly Leu Ala Ala Lys Cys Phe Asp 50 Met Pro Val Ser Leu Asp Gly Asp Thr Asn Thr Ser Thr Gln Glu Val Val Gln Tyr Asn Trp Glu Thr Gly Asp Asp Arg Phe Ser Phe Arg Ser Phe Arg Ser Gly Met Trp Leu Ser Cys Glu Glu Thr Val Glu Glu Pro Gly Glu Arg Cys Arg Ser Phe Ile Glu Leu Thr Pro 110 115 Pro Ala Lys Arg Gly Glu Lys Gly Leu Leu Glu Phe Ala Thr Leu 125 130 Gln Gly Pro Cys His Pro Thr Leu Arg Phe Gly Gly Lys Arg Leu 140 145 Met Glu Lys Ala Ser Leu Pro Ser Pro Pro Leu Gly Leu Cys Gly 160 Lys Asn Pro Met Val Ile Pro Gly Asn Ala Asp His Leu His Arg 175 180 Thr Ser Ile His Gln Leu Pro Pro Ala Thr Asn Arg Leu Ala Thr His Trp Glu Pro Cys Leu Trp Ala Gln Thr Glu Arg Leu Cys Cys 200 Cys Phe Leu Cys Pro Val Arg Ser Pro Gly Asp Gly Pro His 220 225 Asp Val Phe Thr Ser Leu Pro Ser Asp Cys Gln Leu Gly Ser Arg 230 235 Arg Leu Glu Thr Thr Cys Leu Glu Leu Trp Leu Gly Leu Leu His 245 250 Gly Leu Ala Leu Leu His Leu Leu His Gly Val Gly Cys His His 265 Leu Gln His Val His Gln Asp Gly Ala Gly Val Gln Val Gln Ala <210> 273 <211> 1158 <212> DNA <213> Homo sapiens <400> 273 aactggaagg aaagaaagaa aggtcagctt tggcccagat gtggttaccc 50 cttggtctcc tgtctttatg tctttctcct cttcctattc tgtcatctcc 100

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accaaccagg gtagtggcat ggagcaccgt aaccatctgt gcttctgtga 250 tctctatgac agagccactt ctccacctct gaaatgttcc ctgctctgaa 300 atctggcatg agatggcaca ggtgaccacg cagaagccac cagaatcttg 350 cctgccctat tcctcctccc aagtctgttc tcttattgtc aacctcagca 400 caacaggctg gcgccaatgg cattacagag aaagcaatct gtgtggctag 450 tgggcagatt accatgcaag ccccaggaga aatggaggag ctttgtagcc 500 acctccctgt cagccagtat taacatgtcc ccttccccct gccccgccgt 550 agattcagga cattcgcccc tgtgtgccac caaaccagga ctttcccctt 600 ggcttggcat ccctggctct ctcctggtac ccagcaagac gtctgttcca 650 gggcagtgta gcatctttca agctccgtta ctatggcgat ggccatgatg 700 ttacaatccc acttgcctga ataatcaagt gggaagggga agcagaggga 750 aatggggcca tgtgaatgca gctgctctgt tctccctacc ctgaggaaaa 800 accaaaggga agcaacagga acttctgcaa ctggttttta tcggaaagat 850 catcctgcct gcagatgctg ttgaaggggc acaagaaatg tagctggaga 900 agattgatga aagtgcaggt gtgtaaggaa atagaacagt ctgctgggag 950 tcagacctgg aattctgatt ccaaactctt tattactttg ggaagtcact 1000 cagcetecce gtagecatet ecagggtgae ggaacecagt gtattacetg 1050 ctggaaccaa ggaaactaac aatgtaggtt actagtgaat accccaatgg 1100 tttctccaat tatgcccatg ccaccaaaac aataaaacaa aattctctaa 1150 cactgaaa 1158

<210> 274

<211> 86

<212> PRT

<213> Homo sapiens

<400> 274

Met Trp Leu Pro Leu Gly Leu Leu Ser Leu Cys Leu Ser Pro Leu 1 5 10 15

Pro Ile Leu Ser Ser Pro Ser Leu Lys Ser Gln Ala Cys Gln Gln 20 25 30

Leu Leu Trp Thr Leu Pro Ser Pro Leu Val Ala Phe Arg Ala Asn 35 40 45

Arg Thr Thr Tyr Val Met Asp Val Ser Thr Asn Gln Gly Ser Gly 50 55 60

Met Glu His Arg Asn His Leu Cys Phe Cys Asp Leu Tyr Asp Arg 65 70 75

Ala Thr Ser Pro Pro Leu Lys Cys Ser Leu Leu 80 85

<210> 275 <211> 2694 <212> DNA <213> Homo sapiens

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tatttggtat gttgtatata ttacataaaa taacttttca aatatagttt 1500 aataacactt agaagtgttt acttacctgg aaaataattg ctatgccgta 1550 cattcagagt gcccctccc ctgcaaqqcc ttqccatqat taacaaqtaa 1600 cttgttagtc ttacagataa ttcatgcatt aacagtttaa gatttagacc 1650 atggtaatag tagttettat tetetaaggt tatateatat gtaatttaaa 1700 agtattttta agacaagttt cctqtatacc tctqaactqt tttqattttq 1750 agttcatcat gatagatctg ctgtttcctt ataaaaggca tttgttgtgt 1800 gagttaatgc aaagtagcca agtccagcta tatagcagct tcagaaacat 1850 acctgaccaa aaaattccca gtaaccaggc atgatcaatt tatagtggtc 1900 gtttacatct aataattatc aggacttttt tcaggagtgg gttataaaaa 1950 cattcaagtt ggtctgacag tattttgtta aggatatttg tttgtatgtt 2000 tattcagtat acttacataa aaattatttc gccatcagcc aaaactcagt 2050 aatcatgaca gctgtctgtt gttttatgaa gtttatttct caagaaaatg 2100 ggaataaatt tgggatttgt tcagcttttt tactaaagat gcctaaagcc 2150 acaggtttta ttgcctaact taagccatga cttttagata tgagatgacg 2200 ggaagcagga cgaaatatcg gcgtgtggct ggagccttcc cactggaggc 2250 tgaaagtggc ttgtggtatt ataatgttca gatttcaaga ggaaggtgca 2300 ggtacacatg agttagagag ctggtgagac agttgggaac tctttgtgct 2350 tgtgatctac tggacttttt ttttgcagga agtgcattct ctggtccttc 2400 cctattttct gttctggatg tcagtgcagt gcactgctac tgttttatcc 2450 acttggccac agactttttc taacagctgc gtattatttc tatatactaa 2500 ttgcattggc agcattgtgt ctttgacctt gtatactagc ttgacatagt 2550 gctgtctctg atttctaggc tagttacttg agatatgaat tttccataga 2600 atatgcactg atacaacatt accattcttc tatggaaaga aaacttttga 2650 

<210> 276

<211> 131

<212> PRT

<213> Homo sapiens

<400> 276

Met Ala Gly Ile Lys Ala Leu Ile Ser Leu Ser Phe Gly Gly Ala 1 5 10 15

Ile Gly Leu Met Phe Leu Met Leu Gly Cys Ala Leu Pro Ile Tyr 20 25 30

Asn Lys Tyr Trp Pro Leu Phe Val Leu Phe Phe Tyr Ile Leu Ser

35 40 45 Pro Ile Pro Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp 55 Ala Met Ser Asn Ala Cys Lys Glu Leu Ala Ile Phe Leu Thr Thr Gly Ile Val Val Ser Ala Phe Gly Leu Pro Ile Val Phe Ala Arg Ala His Leu Ile Glu Trp Gly Ala Cys Ala Leu Val Leu Thr Gly Asn Thr Val Ile Phe Ala Thr Ile Leu Gly Phe Phe Leu Val Phe 110 115

Gly Ser Asn Asp Asp Phe Ser Trp Gln Gln Trp 125

<210> 277 <211> 4104 <212> DNA

<213> Homo sapiens

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Met	Leu	Pro	Ala	Ala 35	Pro	Ser	Gly	Cys	Pro 40	Gln	Leu	Cys	Arg	Cys 45
Glu	Gly	Arg	Leu	Leu 50	Tyr	Cys	Glu	Ala	Leu 55	Asn	Leu	Thr	Glu	Ala 60
Pro	His	Asn	Leu	Ser 65	Gly	Leu	Leu	Gly	Leu 70	Ser	Leu	Arg	Tyr	Asn 75
Ser	Leu	Ser	Glu	Leu 80	Arg	Ala	Gly	Gln	Phe 85	Thr	Gly	Leu	Met	Gln 90
Leu	Thr	Trp	Leu	Tyr 95	Leu	Asp	His	Asn	His 100	Ile	Суз	Ser	Val	Gln 105
Gly	Asp	Ala	Phe	Gln 110	Lys	Leu	Arg	Arg	Val 115	Lys	Glu	Leu	Thr	Leu 120
Ser	Ser	Asn	Gln	Ile 125	Thr	Gln	Leu	Pro	Asn 130	Thr	Thr	Phe	Arg	Pro 135
Met	Pro	Asn	Leu	Arg 140	Ser	Val	Asp	Leu	Ser 145	Tyr	Asn	Lys	Leu	Gln 150
Ala	Leu	Ala	Pro	Asp 155	Leu	Phe	His	Gly	Leu 160	Arg	Lys	Leu	Thr	Thr 165
Leu	His	Met	Arg	Ala 170	Asn	Ala	Ile	Gln	Phe 175	Val	Pro	Val	Arg	Ile 180
Phe	Gln	Asp	Cys	Arg 185	Ser	Leu	Lys	Phe	Leu 190	Asp	Ile	Gly	Tyr	Asn 195
Gln	Leu	Lys	Ser	Leu 200	Ala	Arg	Asn	Ser	Phe 205	Ala	Gly	Leu	Phe	Lys 210
Leu	Thr	Glu	Leu	His 215	Leu	Glu	His	Asn	Asp 220	Leu	Val	Lys	Val	Asn 225

Met Glu Pro His Val Phe Glu Thr Val Pro His Leu Gln Ser Leu 275 280 285

Phe Ala His Phe Pro Arg Leu Ile Ser Leu His Ser Leu Cys Leu

Arg Arg Asn Lys Val Ala Ile Val Val Ser Ser Leu Asp Trp Val

Trp Asn Leu Glu Lys Met Asp Leu Ser Gly Asn Glu Ile Glu Tyr

230

245

235

250

Gln Leu Asp Ser Asn Arg Leu Thr Tyr Ile Glu Pro Arg Ile Leu 290 Asn Ser Trp Lys Ser Leu Thr Ser Ile Thr Leu Ala Gly Asn Leu Trp Asp Cys Gly Arg Asn Val Cys Ala Leu Ala Ser Trp Leu Ser 320 325 Asn Phe Gln Gly Arg Tyr Asp Gly Asn Leu Gln Cys Ala Ser Pro Glu Tyr Ala Gln Gly Glu Asp Val Leu Asp Ala Val Tyr Ala Phe His Leu Cys Glu Asp Gly Ala Glu Pro Thr Ser Gly His Leu Leu 370 Ser Ala Val Thr Asn Arg Ser Asp Leu Gly Pro Pro Ala Ser Ser 380 385 Ala Thr Thr Leu Ala Asp Gly Gly Glu Gly Gln His Asp Gly Thr 395 Phe Glu Pro Ala Thr Val Ala Leu Pro Gly Gly Glu His Ala Glu Asn Ala Val Gln Ile His Lys Val Val Thr Gly Thr Met Ala Leu 425 430 Ile Phe Ser Phe Leu Ile Val Val Leu Val Leu Tyr Val Ser Trp Lys Cys Phe Pro Ala Ser Leu Arg Gln Leu Arg Gln Cys Phe Val 455 Thr Gln Arg Arg Lys Gln Lys Gln Lys Gln Thr Met His Gln Met Ala Ala Met Ser Ala Gln Glu Tyr Tyr Val Asp Tyr Lys Pro Asn 485 490 His Ile Glu Gly Ala Leu Val Ile Ile Asn Glu Tyr Gly Ser Cys 500 505 Thr Cys His Gln Gln Pro Ala Arg Glu Cys Glu Val <210> 279 <211> 46 <212> DNA <213> Artificial Sequence

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<210> 281

<211> 229

<212> PRT

<213> Homo sapiens

<400> 281

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Asp Val Ala Ala Asn Trp Ser Gln Asn Arg Thr Pro Cys Ala Gly 35 40

Gly Ala Val Glu Phe Pro Ala Asp Lys Met Val Ser Val Leu Val
50 55 60

Gln Glu Gly His Ala Val Ser Asp Met Leu Leu Pro Leu Asp Gly 65 70 75

Glu Leu Val Leu Ala Ser Gly Ala Gly Phe Gly Val Ser Asp Val 80 85

Gly Ser His Leu Asp Cys Gly Ala Gly Glu Pro Ala Val Phe Arg 95 100 105

Asp Ser Asp Arg Phe Ser Trp His Asp Pro His Leu Trp Arg Ser 110 115 120

Gly Asp Glu Ala Pro Gly Leu Phe Phe Val Asp Ala Glu Arg Val 125 130 135 ProCysArgHisAsp 140Asp 140Phe Phe Phe Pro 145ProSer Ala Ser Phe 150ArgValGlyLeuGlyProGlyAla Ser Pro 160ValArg ValArg Ser 165IleSerAla LeuGlyArgThrPhe Phe Pro 160Arg Arg ArgAsp GluAsp LeuAla 180ValPhe LeuAla SerArgAla GlyArgLeuArgPhe HisGlyPro 195GlyAla LeuSerValGlyProGluAsp CysAla Asp ProSerGlyCysValCysGlyAla GluAla GluAla GluProTrpIleCysAla Ala Ala

Leu Leu Gln Pro

<210> 282

<211> 644

<212> DNA

<213> Homo sapiens

<400> 282

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<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 283

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35 40 45

Cys Ile Leu Gln Ser Leu Ala Leu Thr Trp Tyr Ser Leu Ser Phe
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Ile Pro Phe Ala Arg Asp Ala Val Lys Lys Cys Phe Ala Val Cys 65 70 75

Leu Ala

<210> 284

<211> 2623

<212> DNA

<213> Homo sapiens

<400> 284

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<212>	PRT

<213> Homo sapiens

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Leu Thr His Ala His Pro Asn Leu Thr Val Tyr Lys Lys Glu Asp

280

				290					295					300
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Ile	Ile	Ala	Val	Ala 320	Asp	Glu	Gly	Trp	His 325	Ile	Leu	Gln	Asn	Lys 330
Ser	Asp	Asp	Phe	Leu 335	Leu	Gly	Asn	His	Gly 340	Tyr	Asp	Asn	Ala	Leu 345
Ala	Asp	Met	His	Pro 350	Ile	Phe	Leu	Ala	His 355	Gly	Pro	Ala	Phe	Arg 360
Lys	Asn	Phe	Ser	Lys 365	Glu	Ala	Met	Asn	Ser 370	Thr	Asp	Leu	Tyr	Pro 375
Leu	Leu	Cys	His	Leu 380	Leu	Asn	Ile	Thr	Ala 385	Met	Pro	His	Asn	Gly 390
Ser	Phe	Trp	Asn	Val 395	Gln	Asp	Leu	Leu	Asn 400	Ser	Ala	Met	Pro	Arg 405
Val	Val	Pro	Tyr	Thr 410	Gln	Ser	Thr	Ile	Leu 415	Leu	Pro	Gly	Ser	Val 420
Lys	Pro	Ala	Glu	Tyr 425	Asp	Gln	Glu	Gly	Ser 430	Tyr	Pro	Tyr	Phe	Ile 435
Gly	Val	Ser	Leu	Gly 440	Ser	Ile	Ile	Val	Ile 445	Val	Phe	Phe	Val	Ile 450
Phe	Ile	Lys	His	Leu 455	Ile	His	Ser	Gln	Ile 460	Pro	Ala	Leu	Gln	Asp 465
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<212> DNA

<213> Homo sapiens

<400> 286

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<213> Homo sapiens

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115

120

Ile	Leu	Asp	Leu	Lys 125	Ile	Ile	Gln	Pro	Asp 130	Lys	Asn	Asn	Tyr	Ala 135
Ala	Met	Val	Phe	His 140	Tyr	Met	Ser	Ile	Thr 145	Ile	Leu	Val	Phe	Phe 150
Met	Met	Glu	Ile	Ile 155	Phe	Lys	Leu	Phe	Val 160	Phe	Arg	Leu	Ser	Ser 165
Phe	Thr	Thr	Ser	Leu 170	Arg	Ser	Trp	Met	Pro 175	Val	Val	Val	Val	Val 180
Ser	Phe	Ile	Leu	Asp 185	Ile	Val	Leu	Leu	Phe 190	Gln	Glu	His	Gln	Phe 195
Glu	Ala	Leu	Gly	Leu 200	Leu	Ile	Leu	Leu	Arg 205	Leu	Trp	Arg	Val	Ala 210
Arg	Ile	Ile	Asn	Gly 215	Ile	Ile	Ile	Ser	Val 220	Lys	Thr	Arg	Ser	Glu 225
Arg	Gln	Leu	Leu	Arg 230	Leu	Lys	Gln	Met	Asn 235	Val	Gln	Leu	Ala	Ala 240
Lys	Ile	Gln	His	Leu 245	Glu	Phe	Ser	Суз	Ser 250	Glu	Lys	Pro	Leu	Asp 255

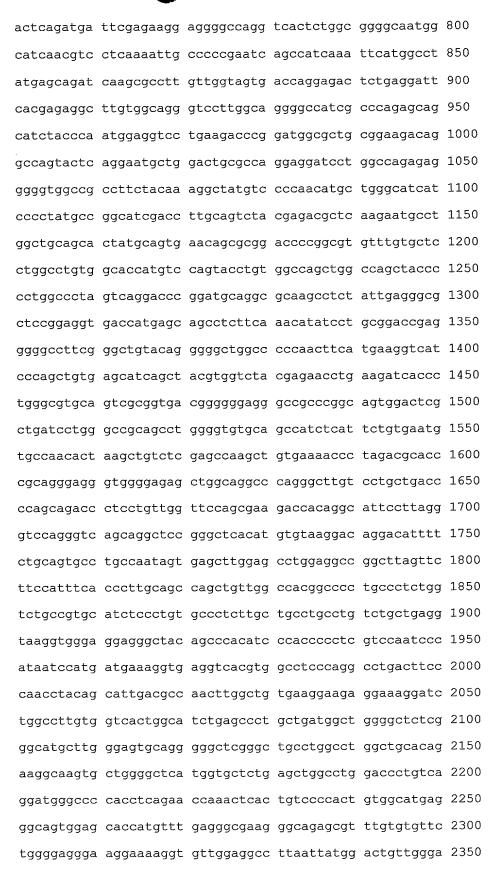
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<212> DNA

<213> Homo sapiens

<400> 288

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<211> 469

<212> PRT

<213> Homo sapiens

<400> 289

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Thr Glu Phe Gln Tyr Phe Glu Ser Lys Gly Leu Pro Ala Glu Leu 20 25 30

Lys Ser Ile Phe Lys Leu Ser Val Phe Ile Pro Ser Gln Glu Phe 35 40 45

Ser Thr Tyr Arg Gln Trp Lys Gln Lys Ile Val Gln Ala Gly Asp 50 55 60

Lys Asp Leu Asp Gly Gln Leu Asp Phe Glu Glu Phe Val His Tyr 65 70 75

Leu Gln Asp His Glu Lys Lys Leu Arg Leu Val Phe Lys Ile Leu 80 85 90 Asp Lys Lys Asn Asp Gly Arg Ile Asp Ala Gln Glu Ile Met Gln Ser Leu Arg Asp Leu Gly Val Lys Ile Ser Glu Gln Gln Ala Glu 115 Lys Ile Leu Lys Ser Met Asp Lys Asn Gly Thr Met Thr Ile Asp Trp Asn Glu Trp Arg Asp Tyr His Leu Leu His Pro Val Glu Asn Ile Pro Glu Ile Ile Leu Tyr Trp Lys His Ser Thr Ile Phe Asp Val Gly Glu Asn Leu Thr Val Pro Asp Glu Phe Thr Val Glu Glu 175 Arg Gln Thr Gly Met Trp Trp Arg His Leu Val Ala Gly Gly Gly 190 Ala Gly Ala Val Ser Arg Thr Cys Thr Ala Pro Leu Asp Arg Leu 200 205 Lys Val Leu Met Gln Val His Ala Ser Arg Ser Asn Asn Met Gly 220 Ile Val Gly Gly Phe Thr Gln Met Ile Arg Glu Gly Gly Ala Arg Ser Leu Trp Arg Gly Asn Gly Ile Asn Val Leu Lys Ile Ala Pro Glu Ser Ala Ile Lys Phe Met Ala Tyr Glu Gln Ile Lys Arg Leu 260 265 Val Gly Ser Asp Gln Glu Thr Leu Arg Ile His Glu Arg Leu Val Ala Gly Ser Leu Ala Gly Ala Ile Ala Gln Ser Ser Ile Tyr Pro 295 Met Glu Val Leu Lys Thr Arg Met Ala Leu Arg Lys Thr Gly Gln 305 310 Tyr Ser Gly Met Leu Asp Cys Ala Arg Arg Ile Leu Ala Arg Glu Gly Val Ala Ala Phe Tyr Lys Gly Tyr Val Pro Asn Met Leu Gly Ile Ile Pro Tyr Ala Gly Ile Asp Leu Ala Val Tyr Glu Thr Leu 350 355 Lys Asn Ala Trp Leu Gln His Tyr Ala Val Asn Ser Ala Asp Pro 365 Gly Val Phe Val Leu Leu Ala Cys Gly Thr Met Ser Ser Thr Cys 385 Gly Gln Leu Ala Ser Tyr Pro Leu Ala Leu Val Arg Thr Arg Met 395 400

Gln Ala Gln Ala Ser Ile Glu Gly Ala Pro Glu Val Thr Met Ser 420

Ser Leu Phe Lys His Ile Leu Arg Thr Glu Gly Ala Phe Gly Leu 435

Tyr Arg Gly Leu Ala Pro Asn Phe Met Lys Val Ile Pro Ala Val 450

Ser Ile Ser Tyr Val Val Tyr Glu Asn Leu Lys Ile Thr Leu Gly 465

Val Gln Ser Arg

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- <210> 291
- <211> 282
- <212> PRT
- <213> Homo sapiens

<400> 291

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- Ile Ile Ile Leu Ala Gly Ala Ile Ala Leu Ile Ile Gly Phe Gly 20 25 30
- Ile Ser Gly Arg His Ser Ile Thr Val Thr Thr Val Ala Ser Ala 35 40 45
- Gly Asn Ile Gly Glu Asp Gly Ile Leu Ser Cys Thr Phe Glu Pro
  50 55 60
- Asp Ile Lys Leu Ser Asp Ile Val Ile Gln Trp Leu Lys Glu Gly 65 70 75
- Val Leu Gly Leu Val His Glu Phe Lys Glu Gly Lys Asp Glu Leu 80 85 90
- Ser Glu Gln Asp Glu Met Phe Arg Gly Arg Thr Ala Val Phe Ala 95 100 105
- Asp Gln Val Ile Val Gly Asn Ala Ser Leu Arg Leu Lys Asn Val 110 115 120
- Gln Leu Thr Asp Ala Gly Thr Tyr Lys Cys Tyr Ile Ile Thr Ser 125 130 135
- Lys Gly Lys Gly Asn Ala Asn Leu Glu Tyr Lys Thr Gly Ala Phe \$140\$ \$150\$
- Ser Met Pro Glu Val Asn Val Asp Tyr Asn Ala Ser Ser Glu Thr

				155					160					165
Leu	Arg	Cys	Glu	Ala 170	Pro	Arg	Trp	Phe	Pro 175	Gln	Pro	Thr	Val	Val 180
Trp	Ala	Ser	Gln	Val 185	Asp	Gln	Gly	Ala	Asn 190	Phe	Ser	Glu	Val	Ser 195
Asņ	Thr	Ser	Phe	Glu 200	Leu	Asn	Ser	Glu	Asn 205	Val	Thr	Met	Lys	Val 210
Val	Ser	Val	Leu	Tyr 215	Asn	Val	Thr	Ile	Asn 220	Asn	Thr	Tyr	Ser	Cys 225
Met	Ile	Glu	Asn	Asp 230	Ile	Ala	Lys	Ala	Thr 235	Gly	Asp	Ile	Lys	Val 240
Thr	Glu	Ser	Glu	Ile 245	Lys	Arg	Arg		His 250	Leu	Gln	Leu	Leu	Asn 255
Ser	Lys	Ala	Ser	Leu 260	Суѕ	Val	Ser	Ser	Phe 265	Phe	Ala	Ile	Ser	Trp 270
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<211> 1484

<212> DNA

<213> Homo sapiens

<400> 292

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<211> 180

<212> PRT

<213> Homo sapiens

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Ala Leu Trp Gly Gly Thr Gln Pro Leu Leu Lys Arg Ala Ser Ala 20 25 30

Gly Leu Gln Arg Val His Glu Pro Thr Trp Ala Gln Gln Leu Leu
35
40
45

Gln Glu Met Lys Thr Leu Phe Leu Asn Thr Glu Tyr Leu Met Pro
50 55 60

Phe Leu Leu Asn Gln Cys Gly Ser Leu Leu Tyr Tyr Leu Thr Leu 65 70 75

Ala Ser Thr Asp Leu Thr Leu Ala Val Pro Ile Cys Asn Ser Leu 80 85 90

Ala Ile Ile Phe Thr Leu Ile Val Gly Lys Ala Leu Gly Glu Asp 95 100 105

Ile Gly Gly Lys Arg Lys Leu Asp Tyr Cys Glu Cys Gly Thr Gln 110 115 120

Leu Cys Gly Ser Arg His Thr Cys Val Ser Ser Phe Pro Glu Pro 125 130 135

Ile Ser Pro Glu Trp Val Arg Thr Arg Pro Phe Pro Ile Leu Pro 140 145

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Phe Pro Trp Thr Val Trp Arg Lys Thr Glu Ala Gly Val Trp Asp 170 175 180

<210> 294

<211> 1164

<212> DNA

<213> Homo sapiens

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<211> 237

<212> PRT

## <213> Homo sapiens

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Thr Ser Cys Ile Ser Ser Ser Ala Ser Ser Ser Leu Glu Thr Pro
Val Arg Leu Tyr Gln Asn Met Phe Cys Ser Ala Glu Asn Cys Ser
Glu Glu Thr His Ile Thr Ala Phe Thr Val His Val Ser Ala Glu
Glu His Phe His Phe Val Ser Gln Cys Cys Gln Gly Lys Glu Cys
Ser Asn Thr Ser Asp Ala Leu Asp Pro Pro Leu Lys Asn Val Ser
                 110
Ser Asn Ala Glu Cys Pro Ala Cys Tyr Glu Ser Asn Gly Thr Ser
                                     130
Cys Arg Gly Lys Pro Trp Lys Cys Tyr Glu Glu Glu Gln Cys Val
Phe Leu Val Ala Glu Leu Lys Asn Asp Ile Glu Ser Lys Ser Leu
                 155
                                     160
Val Leu Lys Gly Cys Ser Asn Val Ser Asn Ala Thr Cys Gln Phe
Leu Ser Gly Glu Asn Lys Thr Leu Gly Gly Val Ile Phe Arg Lys
                                     190
Phe Glu Cys Ala Asn Val Asn Ser Leu Thr Pro Thr Ser Ala Pro
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                                     205
Thr Thr Ser His Asn Val Gly Ser Lys Ala Ser Leu Tyr Leu Leu
Ala Leu Ala Ser Leu Leu Leu Arg Gly Leu Leu Pro
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<210> 296

<211> 1245

<212> DNA

<213> Homo sapiens

<400> 296

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ccagccccat ggtccccgcc gccggcgcgc tgctgtgggt cctgctgctg 150

aatctgggtc cccgggcggc gggggcccaa ggcctgaccc agactccgac 200 cgaaatgcag cgggtcagtt tacgctttgg gggccccatg acccgcagct 250 accggagcac cgcccggact ggtcttcccc qqaaqacaaq qataatccta 300 gaggacgaga atgatgccat ggccgacgcc gaccgcctgg ctggaccagc 350 ggctgccgag ctcttggccg ccacggtgtc caccggcttt agccggtcgt 400 ccgccattaa cgaggaggat gggtcttcag aagaggggt tgtgattaat 450 gccggaaagg atagcaccag cagagagctt cccagtgcga ctcccaatac 500 agcggggagt tccagcacga ggtttatagc caatagtcag gagcctgaaa 550 tcaggctgac ttcaagcctg ccgcgctccc ccgggaggtc tactgaggac 600 ctgccaggct cgcaggccac cctgagccag tggtccacac ctgggtctac 650 cccgagccgg tggccgtcac cctcacccac agccatgcca tctcctgagg 700 atctgcggct ggtgctgatg ccctggggcc cgtggcactg ccactgcaag 750 tcgggcacca tgagccggag ccggtctggg aagctgcacg gcctttccgg 800 gcgccttcga gttggggcgc tgagccaqct ccqcacqqaq cacaaqcctt 850 gcacctatca acaatgtccc tgcaaccgac ttcgggaaga gtgcccctg 900 gacacaagtc tetgtactga caccaactgt gcctctcaga gcaccaccag 950 taccaggace accactacce cettececae catecacete agaagcagte 1000 ccagcetgcc accegecage ecetgeceag ecetggettt ttggaaacgg 1050 gtcaggattg gcctggagga tatttggaat agcctctctt cagtgttcac 1100 agagatgcaa ccaatagaca gaaaccagag gtaatggcca cttcatccac 1150 atgaggagat gtcagtatct caacctctct tgccctttca atcctagcac 1200 ccactagata tttttagtac agaaaaacaa aactggaaaa cacaa 1245

<210> 297

<211> 341

<212> PRT

<213> Homo sapiens

<400> 297

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Leu Gly Pro Arg Ala Ala Gly Ala Gln Gly Leu Thr Gln Thr Pro 20 25 30

Thr Glu Met Gln Arg Val Ser Leu Arg Phe Gly Gly Pro Met Thr 35 40 40

Arg Ser Tyr Arg Ser Thr Ala Arg Thr Gly Leu Pro Arg Lys Thr 50 55 60

Arg Ile Ile Leu Glu Asp Glu Asn Asp Ala Met Ala Asp Ala Asp

					03					70					12
	Arg	Leu	Ala	Gly	Pro 80	Ala	Ala	Ala	Glu	Leu 85	Leu	Ala	Ala	Thr	Va]
	Ser	Thr	Gly	Phe	Ser 95	Arg	Ser	Ser	Ala	Ile 100	Asn	Glu	Glu	Asp	Gl <sub>y</sub> 105
	Ser	Ser	Glu	Glu	Gly 110	Val	Val	Ile	Asn	Ala 115	Gly	Lys	Asp	Ser	Thr 120
	Ser	Arg	Glu	Leu	Pro 125	Ser	Ala	Thr	Pro	Asn 130	Thr	Ala	Gly	Ser	Ser 135
	Ser	Thr	Arg	Phe	Ile 140	Ala	Asn	Ser	Gln	Glu 145	Pro	Glu	Ile	Arg	Let 150
	Thr	Ser	Ser	Leu	Pro 155	Arg	Ser	Pro	Gly	Arg 160	Ser	Thr	Glu	Asp	Leu 165
	Pro	Gly	Ser	Gln	Ala 170	Thr	Leu	Ser	Gln	Trp 175	Ser	Thr	Pro	Gly	Ser 180
	Thr	Pro	Ser	Arg	Trp 185	Pro	Ser	Pro	Ser	Pro 190	Thr	Ala	Met	Pro	Ser 195
	Pro	Glu	Asp	Leu	Arg 200	Leu	Val	Leu	Met	Pro 205	Trp	Gly	Pro	Trp	His 210
	Cys	His	Cys	Lys	Ser 215	Gly	Thr	Met	Ser	Arg 220	Ser	Arg	Ser	Gly	Lys 225
	Leu	His	Gly	Leu	Ser 230	Gly	Arg	Leu	Arg	Val 235	Gly	Ala	Leu	Ser	Gln 240
	Leu	Arg	Thr	Glu	His 245	Lys	Pro	Cys	Thr	Tyr 250	Gln	Gln	Cys	Pro	Cys 255
	Asn	Arg	Leu	Arg	Glu 260	Glu	Cys	Pro	Leu	Asp 265	Thr	Ser	Leu	Cys	Thr 270
	Asp	Thr	Asn	Cys	Ala 275	Ser	Gln	Ser	Thr	Thr 280	Ser	Thr	Arg	Thr	Thr 285
	Thr	Thr	Pro	Phe	Pro 290	Thr	Ile	His	Leu	Arg 295	Ser	Ser	Pro	Ser	Leu 300
	Pro	Pro	Ala	Ser	Pro 305	Cys	Pro	Ala	Leu	Ala 310	Phe	Trp	Lys	Arg	Val 315
	Arg	Ile	Gly	Leu	Glu 320	Asp	Ile	Trp	Asn	Ser 325	Leu	Ser	Ser	Val	Phe 330
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<400> 298

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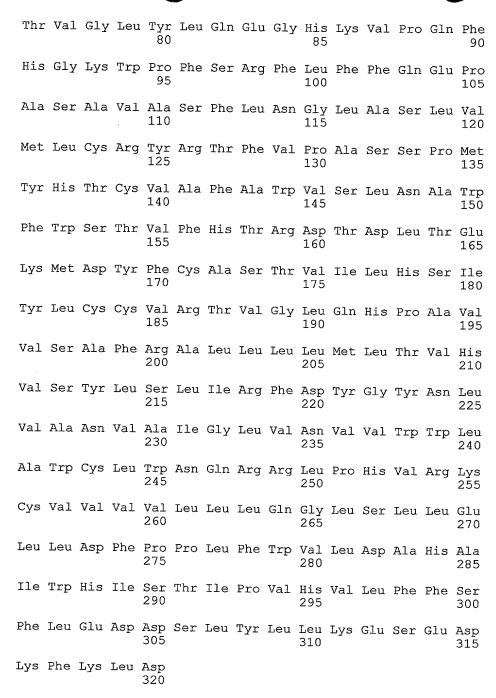
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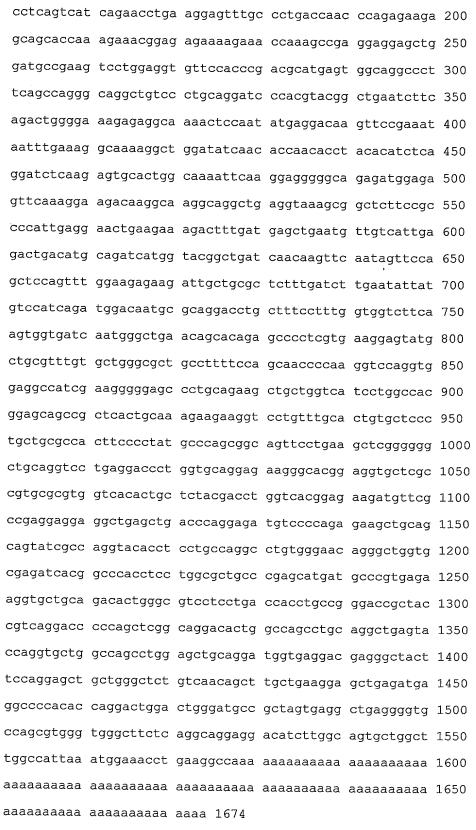
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Lys Lys Lys Val Leu Phe Ala Leu Cys Ser Leu Leu Arg His Phe

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	Gln	Gly	Trp	Суз	Glu 380	Ile	Thr	Ala	His	Leu 385	Leu	Ala	Leu	Pro	Glu 390
	His	Asp	Ala	Arg	Glu 395	Lys	Val	Leu	Gln	Thr 400	Leu	Gly	Val	Leu	Leu 405
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Leu Leu Leu Ala Ser Val Val Trp Phe Ile Leu Val His Val Thr
Asp Arg Ser Asp Ala Arg Leu Gln Tyr Gly Leu Leu Ile Phe Gly
Ala Ala Val Ser Val Leu Leu Gln Glu Val Phe Arg Phe Ala Tyr
 Tyr Lys Leu Leu Lys Lys Ala Asp Glu Gly Leu Ala Ser Leu Ser
 Glu Asp Gly Arg Ser Pro Ile Ser Ile Arg Gln Met Ala Tyr Val
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 Ser Gly Leu Ser Phe Gly Ile Ile Ser Gly Val Phe Ser Val Ile
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 Asn Ile Leu Ala Asp Ala Leu Gly Pro Gly Val Val Gly Ile His
 Gly Asp Ser Pro Tyr Tyr Phe Leu Thr Ser Ala Phe Leu Thr Ala
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 Ala Ile Ile Leu Leu His Thr Phe Trp Gly Val Val Phe Phe Asp
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 Ala Cys Glu Arg Arg Tyr Trp Ala Leu Gly Leu Val Val Gly
 Ser His Leu Leu Thr Ser Gly Leu Thr Phe Leu Asn Pro Trp Tyr
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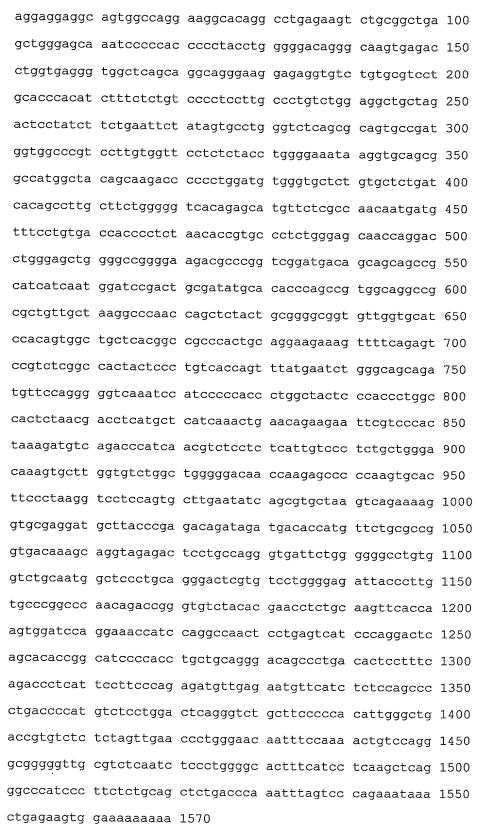
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<213> Homo sapiens

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40

Ser Asn Gln Asp Leu Gly Ala Gly Ala Gly Glu Asp Ala Arg Ser 50 55 60

Asp Asp Ser Ser Ser Arg Ile Ile Asn Gly Ser Asp Cys Asp Met 65 70 75

His Thr Gln Pro Trp Gln Ala Ala Leu Leu Leu Arg Pro Asn Gln 80 85 90

Leu Tyr Cys Gly Ala Val Leu Val His Pro Gln Trp Leu Leu Thr 95 100 105

Ala Ala His Cys Arg Lys Lys Val Phe Arg Val Arg Leu Gly His
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Tyr Ser Leu Ser Pro Val Tyr Glu Ser Gly Gln Gln Met Phe Gln 125 130 135

Gly Val Lys Ser Ile Pro His Pro Gly Tyr Ser His Pro Gly His 140 145 150

Ser Asn Asp Leu Met Leu Ile Lys Leu Asn Arg Arg Ile Arg Pro 155 160 165

Thr Lys Asp Val Arg Pro Ile Asn Val Ser Ser His Cys Pro Ser 170 175 180

Ala Gly Thr Lys Cys Leu Val Ser Gly Trp Gly Thr Thr Lys Ser 185 190

Pro Gln Val His Phe Pro Lys Val Leu Gln Cys Leu Asn Ile Ser 200 205 210

Val Leu Ser Gln Lys Arg Cys Glu Asp Ala Tyr Pro Arg Gln Ile 215 220 225

Asp Asp Thr Met Phe Cys Ala Gly Asp Lys Ala Gly Arg Asp Ser 230 235 240

Cys Gln Gly Asp Ser Gly Gly Pro Val Val Cys Asn Gly Ser Leu 245 250 255

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35 40

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Gly Thr Ala Pro Pro Pro Val Val Ser Thr Gly Ala Ala Ser Ala 65 70 75

Asn Ser Ala Leu Val Thr Val Glu Arg Ala Asp Ser Ser His Leu 80 85 90

Ser Ile Leu Ile Asp Pro Arg Cys Pro Asp Leu Thr Asp Ser Phe 95 100 105

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<sup>&</sup>lt;210> 319

<sup>&</sup>lt;211> 280

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

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Val Thr Trp Val Glu Glu Pro Cys Gly Pro Gly Pro Pro Gln Pro 35 40 45

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50 55 60

Arg Pro Asn Ser Val Gln Pro Gly Ala Glu Arg Glu Lys Pro Gly 65 70 75

Ala Gly Glu Gly Ala Gly Glu Asn Trp Glu Pro Arg Val Leu Pro 80 85 90

Tyr His Pro Ala Gln Pro Gly Gln Ala Ala Lys Lys Ala Val Arg 95 100 105

Thr Arg Tyr Ile Ser Thr Glu Leu Gly Ile Arg Gln Arg Leu Leu 110 115 120

Val Ala Val Leu Thr Ser Gln Thr Thr Leu Pro Thr Leu Gly Val 125 130 135

Ala Val Asn Arg Thr Leu Gly His Arg Leu Glu Arg Val Val Phe 140 145 150

Leu Thr Gly Ala Arg Gly Arg Arg Ala Pro Pro Gly Met Ala Val 155 160 165

Val Thr Leu Gly Glu Glu Arg Pro Ile Gly His Leu His Leu Ala 170 175 180

Leu Arg His Leu Leu Glu Gln His Gly Asp Asp Phe Asp Trp Phe 185 190 195

Phe Leu Val Pro Asp Thr Thr Tyr Thr Glu Ala His Gly Leu Ala 200 205 210

Arg Leu Thr Gly His Leu Ser Leu Ala Ser Ala Ala His Leu Tyr 215 220 225

Leu Gly Arg Pro Gln Asp Phe Ile Gly Glu Pro Thr Pro Gly 230 235 240

Arg Tyr Cys His Gly Gly Phe Gly Val Leu Leu Ser Arg Met Leu 245 250 255

Leu Gln Gln Leu Arg Pro His Leu Glu Gly Cys Arg Asn Asp Ile 260 265 270

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Ser Val Gln Thr Ala Ala Pro Ser Pro Leu Arg Leu Met Asp Leu 590 Leu Ser Lys Lys His Pro Leu Asp Thr Leu Phe Leu Leu Ala Gly Pro Asp Thr Val Leu Thr Pro Asp Phe Leu Asn Arg Cys Arg Met His Ala Ile Ser Gly Trp Gln Ala Phe Phe Pro Met His Phe Gln Ala Phe His Pro Gly Val Ala Pro Pro Gln Gly Pro Gly Pro Pro Glu Leu Gly Arg Asp Thr Gly Arg Phe Asp Arg Gln Ala Ala Ser 665 Glu Ala Cys Phe Tyr Asn Ser Asp Tyr Val Ala Ala Arg Gly Arg 690 Leu Ala Ala Ser Glu Gln Glu Glu Glu Leu Leu Glu Ser Leu Asp Val Tyr Glu Leu Phe Leu His Phe Ser Ser Leu His Val Leu 710 Arg Ala Val Glu Pro Ala Leu Leu Gln Arg Tyr Arg Ala Gln Thr 730 Cys Ser Ala Arg Leu Ser Glu Asp Leu Tyr His Arg Cys Leu Gln Ser Val Leu Glu Gly Leu Gly Ser Arg Thr Gln Leu Ala Met Leu 755 Leu Phe Glu Gln Glu Gln Gly Asn Ser Thr <210> 327 <211> 24 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 327 tggaaggctg ccgcaacgac aatc 24 <210> 328 <211> 20 <212> DNA <213> Artificial Sequence <220> <223> Synthetic oligonucleotide probe

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<212> PRT

<213> Homo sapiens

<400> 334

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Ala Ala Ala Thr Arg Gly Leu Pro Ala Ala Arg Val Arg Trp Glu
20 25 30

Ser Ser Phe Ser Arg Thr Val Val Ala Pro Ser Ala Val Ala Gly 35 40 45

Lys Arg Pro Pro Glu Pro Thr Thr Pro Trp Gln Glu Asp Pro Glu 50 55 60

Pro Glu Asp Glu Asn Leu Tyr Glu Lys Asn Pro Asp Ser His Gly 65 70 75

Tyr Asp Lys Asp Pro Val Leu Asp Val Trp Asn Met Arg Leu Val 80 85 90

Phe Phe Phe Gly Val Ser Ile Ile Leu Val Leu Gly Ser Thr Phe 95 100 105

Val Ala Tyr Leu Pro Asp Tyr Arg Met Lys Glu Trp Ser Arg Arg 110 115 120

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Ile Met Glu Ser Asn Cys Phe Asp Pro Ser Lys Ile Gln Leu Pro 140 145 150

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## <213> Homo sapiens

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<211> 574

<212> PRT

<213> Homo sapiens

<400> 340

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Trp Cys Leu Ala Glu Pro Pro Arg Asp Ser Leu Arg Glu Glu Leu
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Val Ile Thr Pro Leu Pro Ser Gly Asp Val Ala Ala Thr Phe Gln
35 40 45

Phe Arg Thr Arg Trp Asp Ser Glu Leu Gln Arg Glu Gly Val Ser 50 55 60

His Tyr Arg Leu Phe Pro Lys Ala Leu Gly Gln Leu Ile Ser Lys 65 70 75

Tyr Ser Leu Arg Glu Leu His Leu Ser Phe Thr Gln Gly Phe Trp 80 85 90

Arg Thr Arg Tyr Trp Gly Pro Pro Phe Leu Gln Ala Pro Ser Gly 95 100 105

Ala Glu Leu Trp Val Trp Phe Gln Asp Thr Val Thr Asp Val Asp 110 115

Lys Ser Trp Lys Glu Leu Ser Asn Val Leu Ser Gly Ile Phe Cys 125 130 135

Ala Ser Leu Asn Phe Ile Asp Ser Thr Asn Thr Val Thr Pro Thr 140 145 150

Ala Ser Phe Lys Pro Leu Gly Leu Ala Asn Asp Thr Asp His Tyr Phe Leu Arg Tyr Ala Val Leu Pro Arg Glu Val Val Cys Thr Glu 170 Asn Leu Thr Pro Trp Lys Lys Leu Leu Pro Cys Ser Ser Lys Ala Gly Leu Ser Val Leu Leu Lys Ala Asp Arg Leu Phe His Thr Ser Tyr His Ser Gln Ala Val His Ile Arg Pro Val Cys Arg Asn Ala Arg Cys Thr Ser Ile Ser Trp Glu Leu Arg Gln Thr Leu Ser Val 230 235 Val Phe Asp Ala Phe Ile Thr Gly Gln Gly Lys Lys Asp Trp Ser Leu Phe Arg Met Phe Ser Arg Thr Leu Thr Glu Pro Cys Pro Leu Ala Ser Glu Ser Arg Val Tyr Val Asp Ile Thr Thr Tyr Asn Gln 275 Asp Asn Glu Thr Leu Glu Val His Pro Pro Pro Thr Thr Tyr 295 Gln Asp Val Ile Leu Gly Thr Arg Lys Thr Tyr Ala Ile Tyr Asp Leu Leu Asp Thr Ala Met Ile Asn Asn Ser Arg Asn Leu Asn Ile 320 Gln Leu Lys Trp Lys Arg Pro Pro Glu Asn Glu Ala Pro Pro Val 340 Pro Phe Leu His Ala Gln Arg Tyr Val Ser Gly Tyr Gly Leu Gln 350 Lys Gly Glu Leu Ser Thr Leu Leu Tyr Asn Thr His Pro Tyr Arg 365 370 Ala Phe Pro Val Leu Leu Asp Thr Val Pro Trp Tyr Leu Arg 385 Leu Tyr Val His Thr Leu Thr Ile Thr Ser Lys Gly Lys Glu Asn Lys Pro Ser Tyr Ile His Tyr Gln Pro Ala Gln Asp Arg Leu Gln 410 415 Pro His Leu Leu Glu Met Leu Ile Gln Leu Pro Ala Asn Ser Val 425 430 Thr Lys Val Ser Ile Gln Phe Glu Arg Ala Leu Leu Lys Trp Thr Glu Tyr Thr Pro Asp Pro Asn His Gly Phe Tyr Val Ser Pro Ser 455 460

<212> DNA

<213> Homo sapiens

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<210> 345

<211> 111

<212> PRT

<213> Homo sapiens

<400> 345

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Val Thr Leu Val Ala Val Glu Gly Val Lys Glu Gly Ile Glu Lys 20 25 30

Ala Gly Val Cys Pro Ala Asp Asn Val Arg Cys Phe Lys Ser Asp 35 40

Pro Pro Gln Cys His Thr Asp Gln Asp Cys Leu Gly Glu Arg Lys
50 55 60

Cys Cys Tyr Leu His Cys Gly Phe Lys Cys Val Ile Pro Val Lys 65 70 75

Glu Leu Glu Glu Gly Gly Asn Lys Asp Glu Asp Val Ser Arg Pro 80 85 90

Tyr Pro Glu Pro Gly Trp Glu Ala Lys Cys Pro Gly Ser Ser Ser 95 100 105

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<211> 600

<212> PRT

<213> Homo sapiens

<400> 347

Met Arg Ser Cys Leu Trp Arg Cys Arg His Leu Ser Gln Gly Val  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Gln Trp Ser Leu Leu Leu Ala Val Leu Val Phe Phe Leu Phe Ala 20 25 30

Leu Pro Ser Phe Ile Lys Glu Pro Gln Thr Lys Pro Ser Arg His 35 40 40

Gln Arg Thr Glu Asn Ile Lys Glu Arg Ser Leu Gln Ser Leu Ala 50  $\phantom{000}55\phantom{000}$  . 60

Lys Pro Lys Ser Gln Ala Pro Thr Arg Ala Arg Arg Thr Thr Ile

				65					70					75
Tyr	Ala	Glu	Pro	Ala 80	Pro	Glu	Asn	Asn	Ala 85	Leu	Asn	Thr	Gln	Thr 90
Gln	Pro	Lys	Ala	His 95	Thr	Thr	Gly	Asp	Arg 100	Gly	Lys	Glu	Ala	Asn 105
Gln	Ala	Pro	Pro	Glu 110	Glu	Gln	Asp	Lys	Val 115	Pro	His	Thr	Ala	Gln 120
Arg	Ala	Ala	Trp	Lys 125	Ser	Pro	Glu	Lys	Glu 130	Lys	Thr	Met	Val	Asn 135
Thr	Leu	Ser	Pro	Arg 140	Gly	Gln	Asp	Ala	Gly 145	Met	Ala	Ser	Gly	Arg 150
Thr	Glu	Ala	Gln	Ser 155	Trp	Lys	Ser	Gln	Asp 160	Thr	Lys	Thr	Thr	Gln 165
Gly	Asn	Gly	Gly	Gln 170	Thr	Arg	Lys	Leu	Thr 175	Ala	Ser	Arg	Thr	Val 180
Ser	Glu	Lys	His	Gln 185	Gly	Lys	Ala	Ala	Thr 190	Thr	Ala	Lys	Thr	Leu 195
Ile	Pro	Lys	Ser	Gln 200	His	Arg	Met	Leu	Ala 205	Pro	Thr	Gly	Ala	Val 210
Ser	Thr	Arg	Thr	Arg 215	Gln	Lys	Gly	Val	Thr 220	Thr	Ala	Val	Ile	Pro 225
Pro	Lys	Glu	Lys	Lys 230	Pro	Gln	Ala	Thr	Pro 235	Pro	Pro	Ala	Pro	Phe 240
Gln	Ser	Pro	Thr	Thr 245	Gln	Arg	Asn	Gln	Arg 250	Leu	Lys	Ala	Ala	Asn 255
Phe	Lys	Ser	Glu	Pro 260	Arg	Trp	Asp	Phe	Glu 265	Glu	Lys	Tyr	Ser	Phe 270
Glu	Ile	Gly	Gly	Leu 275	Gln	Thr	Thr	Cys	Pro 280	Asp	Ser	Val	Lys	Ile 285
Lys	Ala	Ser	Lys	Ser 290	Leu	Trp	Leu	Gln	Lys 295	Leu	Phe	Leu	Pro	Asn 300
Leu	Thr	Leu	Phe	Leu 305	Asp	Ser	Arg	His	Phe 310	Asn	Gln	Ser	Glu	Trp 315
Asp	Arg	Leu	Glu	His 320	Phe	Ala	Pro	Pro	Phe 325	Gly	Phe	Met	Glu	Leu 330
Asn	Tyr	Ser	Leu	Val 335	Gln	Lys	Val	Val	Thr 340	Arg	Phe	Pro	Pro	Val 345
Pro	Gln	Gln	Gln	Leu 350	Leu	Leu	Ala	Ser	Leu 355	Pro	Ala	Gly	Ser	Leu 360
Arg	Cys	Ile	Thr	Cys 365	Ala	Val	Val	Gly	Asn 370	Gly	Gly	Ile	Leu	Asn 375
Asn	Ser	His	Met	Gly	Gln	Glu	Ile	Asp	Ser	His	Asp	Tyr	Val	Phe

				380					385					390
Arg	Leu	Ser	Gly	Ala 395	Leu	Ile	Lys	Gly	Tyr 400	Glu	Gln	Asp	Val	Gly 405
Thr	Arg	Thr	Ser	Phe 410	Tyr	Gly	Phe	Thr	Ala 415	Phe	Ser	Leu	Thr	Gln 420
Ser	Leu	Leu	Ile	Leu 425	Gly	Asn	Arg	Gly	Phe 430	Lys	Asn	Val	Pro	Leu 435
Gly	Lys	Asp	Val	Arg 440	Tyr	Leu	His	Phe	Leu 445	Glu	Gly	Thr	Arg	Asp 450
Tyr	Glu	Trp	Leu	Glu 455	Ala	Leu	Leu	Met	Asn 460	Gln	Thr	Vaļ	Met	Ser 465
Lys	Asn	Leu	Phe	Trp 470	Phe	Arg	His	Arg	Pro 475	Gln	Glu	Ala	Phe	Arg 480
Glu	Ala	Leu	His	Met 485	Asp	Arg	Tyr	Leu	Leu 490	Leu	His	Pro	Asp	Phe 495
Leu	Arg	Tyr	Met	Lys 500	Asn	Arg	Phe	Leu	Arg 505	Ser	Lys	Thr	Leu	Asp 510
Gly	Ala	His	Trp	Arg 515	Ile	Tyr	Arg	Pro	Thr 520	Thr	Gly	Ala	Leu	Leu 525
Leu	Leu	Thr	Ala	Leu 530	Gln	Leu	Cys	Asp	Gln 535	Val	Ser	Ala	Tyr	Gly 540
Phe	Ile	Thr	Glu	Gly 545	His	Glu	Arg	Phe	Ser 550	Asp	His	Tyr	Tyr	Asp 555
Thr	Ser	Trp	Lys	Arg 560	Leu	Ile	Phe	Tyr	Ile 565	Asn	His	Asp	Phe	Lys 570
Leu	Glu	Arg	Glu	Val 575	Trp	Lys	Arg	Leu	His 580	Asp	Glu	Gly	Ile	Ile 585
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<211> 496

<212> DNA

<213> Homo sapiens

<400> 348

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<210> 349

<211> 91

<212> PRT

<213> Homo sapiens

<400> 349

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Leu Gly Pro Ser Pro Glu Gln Arg Val Glu Ile Val Pro Arg Asp 20 25 30

Leu Arg Met Lys Asp Lys Phe Leu Lys His Leu Thr Gly Pro Leu 35 40 45

Tyr Phe Ser Pro Lys Cys Ser Lys His Phe His Arg Leu Tyr His
50 55 60

Asn Thr Arg Asp Cys Thr Ile Pro Ala Tyr Tyr Lys Arg Cys Ala 65 70 75

Arg Leu Leu Thr Arg Leu Ala Val Ser Pro Val Cys Met Glu Asp 80 85 90

Lys

<210> 350

<211> 1141

<212> DNA

<213> Homo sapiens

<400> 350

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<210> 351

<211> 197

<212> PRT

<213> Homo sapiens

<400> 351

Met Pro Pro Ala Gly Leu Arg Arg Ala Ala Pro Leu Thr Ala Ile 1 5 10 15

Ala Leu Leu Val Leu Gly Ala Pro Leu Val Leu Ala Gly Glu Asp  $20 \\ 25 \\ 30$ 

Cys Leu Trp Tyr Leu Asp Arg Asn Gly Ser Trp His Pro Gly Phe 35 40 45

Asn Cys Glu Phe Phe Thr Phe Cys Cys Gly Thr Cys Tyr His Arg 50 55 60

Tyr Cys Cys Arg Asp Leu Thr Leu Leu Ile Thr Glu Arg Gln Gln 65 70 75

Lys His Cys Leu Ala Phe Ser Pro Lys Thr Ile Ala Gly Ile Ala 80 85 90

Ser Ala Val Ile Leu Phe Val Ala Val Val Ala Thr Thr Ile Cys 95 100 105

Cys Phe Leu Cys Ser Cys Cys Tyr Leu Tyr Arg Arg Arg Gln Gln 110 115 120

Leu Gln Ser Pro Phe Glu Gly Gln Glu Ile Pro Met Thr Gly Ile 125 130 135

Pro Val Gln Pro Val Tyr Pro Tyr Pro Gln Asp Pro Lys Ala Gly
140 145

Pro Ala Pro Pro Gln Pro Gly Phe Met Tyr Pro Pro Ser Gly Pro
155 160 165

Ala Pro Gln Tyr Pro Leu Tyr Pro Ala Gly Pro Pro Val Tyr Asn 170 175 180

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Gly Ala

<210> 352 <211> 3226

<211> 522 <212> DNA

<213> Homo sapiens

<400> 352

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<210> 353

<211> 941

<212> PRT

<213> Homo sapiens

<400> 353

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Leu Leu Ser Ser Leu Leu Ala Leu Leu Thr Val Ser Thr Pro Ser 20 25 30

Trp Cys Gln Ser Thr Glu Ala Ser Pro Lys Arg Ser Asp Gly Thr
35 40 45

Pro Phe Pro Trp Asn Lys Ile Arg Leu Pro Glu Tyr Val Ile Pro 50 55 60

Val His Tyr Asp Leu Leu Ile His Ala Asn Leu Thr Thr Leu Thr
65 70 75

Phe Trp Gly Thr Thr Lys Val Glu Ile Thr Ala Ser Gln Pro Thr
80 85 90

Ser Thr Ile Ile Leu His Ser His His Leu Gln Ile Ser Arg Ala 95 100 105

Thr Leu Arg Lys Gly Ala Gly Glu Arg Leu Ser Glu Glu Pro Leu
110 115 120

Gln Val Leu Glu His Pro Pro Gln Glu Gln Ile Ala Leu Leu Ala 125 130 135

Pro Glu Pro Leu Leu Val Gly Leu Pro Tyr Thr Val Val Ile His

Tyr Ala Gly Asn Leu Ser Glu Thr Phe His Gly Phe Tyr Lys Ser 155 160 165

Thr Tyr Arg Thr Lys Glu Gly Glu Leu Arg Ile Leu Ala Ser Thr 170 175 180

Gln Phe Glu Pro Thr Ala Ala Arg Met Ala Phe Pro Cys Phe Asp

Glu Pro Ala Phe Lys Ala Ser Phe Ser Ile Lys Ile Arg Arg Glu 200 · 205 210

Pro Arg His Leu Ala Ile Ser Asn Met Pro Leu Val Lys Ser Val

				215					220					225
Thr	Val	Ala	Glu	Gly 230	Leu	Ile	Glu	Asp	His 235	Phe	Asp	Val	Thr	Val 240
Lys.	Met	Ser	Thr	Tyr 245	Leu	Val	Ala	Phe	Ile 250	Ile	Ser	Asp	Phe	Glu 255
Ser	Val	Ser	Lys	Ile 260	Thr	Lys	Ser	Gly	Val 265	Lys	Val	Ser	Val	Tyr 270
Ala	Val	Pro	Asp	Lys 275	Ile	Asn	Gln	Ala	Asp 280	Tyr	Ala	Leu	Asp	Ala 285
Ala	Val	Thr	Leu	Leu 290	Glu	Phe	Tyr	Glu	Asp 295	Tyr	Phe	Ser	Ile	Pro 300
Tyr	Pro	Leu	Pro	Lys 305	Gln	Asp	Leu	Ala	Ala 310	Ile	Pro	Asp	Phe	Gln 315
Ser	Gly	Ala	Met	Glu 320	Asn	Trp	Gly	Leu	Thr 325	Thr	Tyr	Arg	Glu	Ser 330
Ala	Leu	Leu	Phe	Asp 335	Ala	Glu	Lys	Ser	Ser 340	Ala	Ser	Ser	Lys	Leu 345
Gly	Ile	Thr	Val	Thr 350	Val	Ala	His	Glu	Leu 355	Ala	His	Gln	Trp	Phe 360
Gly	Asn	Leu	Val	Thr 365	Met	Glu	Trp	Trp	Asn 370	Asp	Leu	Trp	Leu	Asn 375
Glu	Gly	Phe	Ala	Lys 380	Phe	Met	Glu	Phe	Val 385	Ser	Val	Ser	Val	Thr 390
His	Pro	Glu	Leu	Lys 395	Val	Gly	Asp	Tyr	Phe 400	Phe	Gly	Lys	Cys	Phe 405
Asp	Ala	Met	Glu	Val 410	Asp	Ala	Leu	Asn	Ser 415	Ser	His	Pro	Val	Ser 420
Thr	Pro	Val	Glu	Asn 425	Pro	Ala	Gln	Ile	Arg 430	Glu	Met	Phe	Asp	Asp 435
Val	Ser	Tyr	Asp	Lys 440	Gly	Ala	Cys	Ile	Leu 445	Asn	Met	Leu	Arg	Glu 450
Tyr	Leu	Ser	Ala	Asp 455	Ala	Phe	Lys	Ser	Gly 460	Ile	Val	Gln	Tyr	Leu 465
Gln	Lys	His	Ser	Tyr 470	Lys	Asn	Thr	Lys	Asn 475	Glu	Asp	Leu	Trp	Asp 480
Ser	Met	Ala	Ser	Ile 485	Cys	Pro	Thr	Asp	Gly 490	Val	Lys	Gly	Met	Asp 495
Gly	Phe	Cys	Ser	Arg 500	Ser	Gln	His	Ser	Ser 505	Ser	Ser	Ser	His	Trp 510
His	Gln	Glu	Gly	Val 515	Asp	Val	Lys	Thr	Met 520	Met	Asn	Thr	Trp	Thr 525
Leu	Gln	Arg	Gly	Phe	Pro	Leu	Ile	Thr	Ile	Thr	Val	Arg	Gly	Arg

				530					535					540
Asn	Val	His	Met	Lys 545	Gln	Glu	His	Tyr	Met 550	Lys	Gly	Ser	Asp	Gly 555
Ala	Pro	Asp	Thr	Gly 560	Tyr	Leu	Trp	His	Val 565	Pro	Leu	Thr	Phe	Ile 570
Thr	Ser	Lys	Ser	Asn 575	Met	Val	His	Arg	Phe 580	Leu	Leu	Lys	Thr	Lys 585
Thr	Asp	Val	Leu	Ile 590	Leu	Pro	Glu	Glu	Val 595	Glu	Trp	Ile	Lys	Phe 600
Asn	Val	Gly	Met	Asn 605	Gly	Tyr	Tyr	Ile	Val 610	His	Tyr	Glu	Asp	Asp 615
Gly	Trp	Asp	Ser	Leu 620	Thr	Gly	Leu	Leu	Lys 625	Gly	Thr	His	Thr	Ala 630
Val	Ser	Ser	Asn	Asp 635	Arg	Ala	Ser	Leu	Ile 640	Asn	Asn	Ala	Phe	Gln 645
Leu	Val	Ser	Ile	Gly 650	Lys	Leu	Ser	Ile	Glu 655	Lys	Ala	Leu	Asp	Leu 660
Ser	Leu	Tyr	Leu	Lys 665	His	Glu	Thr	Glu	Ile 670	Met	Pro	Val	Phe	Gln 675
Gly	Leu	Asn	Glu	Leu 680	Ile	Pro	Met	Tyr	Lys 685	Leu	Met	Glu	Lys	Arg 690
Asp	Met	Asn	Glu	Val 695	Glu	Thr	Gln	Phe	Lys 700	Ala	Phe	Leu	Ile	Arg 705
Leu	Leu	Arg	Asp	Leu 710	Ile	Asp	Lys	Gln	Thr 715	Trp	Thr	Asp	Glu	Gly 720
Ser	Val	Ser	Glu	Gln 725	Met	Leu	Arg	Ser	Glu 730	Leu	Leu	Leu	Leu	Ala 735
Cys	Val	His	Asn	Tyr 740	Gln	Pro	Cys	Val	Gln 745	Arg	Ala	Glu	Gly	Tyr 750
Phe	Arg	Lys	Trp	Lys 755	Glu	Ser	Asn	Gly	Asn 760	Leu	Ser	Leu	Pro	Val 765
Asp	Val	Thr	Leu	Ala 770	Val	Phe	Ala	Val	Gly 775	Ala	Gln	Ser	Thr	Glu 780
Gly	Trp	Asp	Phe	Leu 785	Tyr	Ser	Lys	Tyr	Gln 790	Phe	Ser	Leu	Ser	Ser 795
Thr	Glu	Lys	Ser	Gln 800	Ile	Glu	Phe	Ala	Leu 805	Cys	Arg	Thr	Gln	Asn 810
Lys	Glu	Lys	Leu	Gln 815	Trp	Leu	Leu	Asp	Glu 820	Ser	Phe	Lys	Gly	Asp 825
Lys	Ile	Lys	Thr	Gln 830	Glu	Phe	Pro	Gln	Ile 835	Leu	Thr	Leu	Ile	Gly 840
Arg	Asn	Pro	Val	Gly	Tyr	Pro	Leu	Ala	Trp	Gln	Phe	Leu	Arg	Lys

					845					850					855	
	Asn	Trp	Asn	Lys	Leu 860	Val	Gln	Lys	Phe	Glu 865	Leu	Gly	Ser	Ser	Ser 870	
	Ile	Ala	His	Met	Val 875	Met	Gly	Thr	Thr	Asn 880	Gln	Phe	Ser	Thr	Arg 885	
	Thr	Arg	Leu	Glu	Glu 890	Val	Lys	Gly	Phe	Phe 895	Ser	Ser	Leu	Lys	Glu 900	
	Asn	Gly	Ser	Gln	Leu 905	Arg	Cys	Val	Gln	Gln 910	Thr	Ile	Glu	Thr	Ile 915	
	Glu	Glu	Asn	Ile	Gly 920	Trp	Met	Asp	Lys	Asn 925	Phe	Asp	Lys	Ile	Arg 930	
	Val	Trp	Leu	Gln	Ser 935	Glu	Lys	Leu	Glu	Arg 940	Met					
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<210> 354 <211> 1587 <212> DNA

<213> Homo sapiens

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<210> 355

<211> 437

<212> PRT

<213> Homo sapiens

<400> 355

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Leu Pro Gly Val Gln Ala Leu Leu Cys Gln Phe Gly Thr Val Gln 20 25 30

His Val Trp Lys Val Ser Asp Leu Pro Arg Gln Trp Thr Pro Lys
35 40 45

Asn Thr Ser Cys Asp Ser Gly Leu Gly Cys Gln Asp Thr Leu Met 50 55 60

Leu Ile Glu Ser Gly Pro Gln Val Ser Leu Val Leu Ser Lys Gly 65 70 75

Cys Thr Glu Ala Lys Asp Gln Glu Pro Arg Val Thr Glu His Arg 80 85 90

Met Gly Pro Gly Leu Ser Leu Ile Ser Tyr Thr Phe Val Cys Arg 95 100 105

Gln Glu Asp Phe Cys Asn Asn Leu Val Asn Ser Leu Pro Leu Trp 110 115 120

Ala Pro Gln Pro Pro Ala Asp Pro Gly Ser Leu Arg Cys Pro Val 125 130 135

Cys Leu Ser Met Glu Gly Cys Leu Glu Gly Thr Thr Glu Glu Ile 140 145 150

Cys Pro Lys Gly Thr Thr His Cys Tyr Asp Gly Leu Leu Arg Leu

				155					160					165
Arg	Gly	Gly	Gly	Ile 170	Phe	Ser	Asn	Leu	Arg 175	Val	Gln	Gly	Cys	Met 180
Pro	Gln	Pro	Gly	Cys 185	Asn	Leu	Leu	Asn	Gly 190	Thr	Gln	Glu	Ile	Gly 195
Pro	Val	Gly	Met	Thr 200	Glu	Asn	Cys	Asn	Arg 205	Lys	Asp	Phe	Leu	Thr 210
Cys	His	Arg	Gly	Thr 215	Thr	Ile	Met	Thr	His 220	Gly	Asn	Leu	Ala	Gln 225
Glu	Pro	Thr	Asp	Trp 230	Thr	Thr	Ser	Asn	Thr 235	Glu	Met	Cys	Glu	Val 240
Gly	Gln	Val	Суз	Gln 245	Glu	Thr	Leu	Leu	Leu 250	Ile	Asp	Val	Gly	Leu 255
Thr	Ser	Thr	Leu	Val 260	Gly	Thr	Lys	Gly	Cys 265	Ser	Thr	Val	Gly	Ala 270
Gln	Asn	Ser	Gln	Lys 275	Thr	Thr	Ile	His	Ser 280	Ala	Pro	Pro	Gly	Val 285
Leu	Val	Ala	Ser	Tyr 290	Thr	His	Phe	Cys	Ser 295	Ser	Asp	Leu	Суз	Asn 300
Ser	Ala	Ser	Ser	Ser 305	Ser	Val	Leu	Leu	Asn 310	Ser	Leu	Pro	Pro	Gln 315
Ala	Ala	Pro	Val	Pro 320	Gly	Asp	Arg	Gln	Cys 325	Pro	Thr	Cys	Val	Gln 330
Pro	Leu	Gly	Thr	Cys 335	Ser	Ser	Gly	Ser	Pro 340	Arg	Met	Thr	Cys	Pro 345
Arg	Gly	Ala	Thr	His 350	Cys	Tyr	Asp	Gly	Tyr 355	Ile	His	Leu	Ser	Gly 360
Gly	Gly	Leu	Ser	Thr 365	Lys	Met	Ser	Ile	Gln 370	Gly	Cys	Val	Ala	Gln 375
Pro	Ser	Ser	Phe	Leu 380	Leu	Asn	His	Thr	Arg 385	Gln	Ile	Gly	Ile	Phe 390
Ser	Ala	Arg	Glu	Lys 395	Arg	Asp	Val	Gln	Pro 400	Pro	Ala	Ser	Gln	His 405
Glu	Gly	Gly	Gly	Ala 410	Glu	Gly	Leu	Glu	Ser 415	Leu	Thr	Trp	Gly	Val 420
Gly	Leu	Ala	Leu	Ala 425	Pro	Ala	Leu	Trp	Trp 430	Gly	Val	Val	Cys	Pro 435
Ser	Cys													

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<sup>&</sup>lt;211> 271

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

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Phe Leu Ser Leu Leu Pro Ser Gly His Pro Gln Pro Ala Gly Asp 20 25 30

Asp Ala Cys Ser Val Gln Ile Leu Val Pro Gly Leu Lys Gly Asp. Ala Gly Glu Lys Gly Asp Lys Gly Ala Pro Gly Arg Pro Gly Arg Val Gly Pro Thr Gly Glu Lys Gly Asp Met Gly Asp Lys Gly Gln Lys Gly Ser Val Gly Arg His Gly Lys Ile Gly Pro Ile Gly Ser Lys Gly Glu Lys Gly Asp Ser Gly Asp Ile Gly Pro Pro Gly Pro Asn Gly Glu Pro Gly Leu Pro Cys Glu Cys Ser Gln Leu Arg Lys Ala Ile Gly Glu Met Asp Asn Gln Val Ser Gln Leu Thr Ser Glu 125 130 Leu Lys Phe Ile Lys Asn Ala Val Ala Gly Val Arg Glu Thr Glu 140 Ser Lys Ile Tyr Leu Leu Val Lys Glu Glu Lys Arg Tyr Ala Asp Ala Gln Leu Ser Cys Gln Gly Arg Gly Gly Thr Leu Ser Met Pro 170 175 Lys Asp Glu Ala Ala Asn Gly Leu Met Ala Ala Tyr Leu Ala Gln Ala Gly Leu Ala Arg Val Phe Ile Gly Ile Asn Asp Leu Glu Lys Glu Gly Ala Phe Val Tyr Ser Asp His Ser Pro Met Arg Thr Phe 220 Asn Lys Trp Arg Ser Gly Glu Pro Asn Asn Ala Tyr Asp Glu Glu 230 235 Asp Cys Val Glu Met Val Ala Ser Gly Gly Trp Asn Asp Val Ala 245 250 Cys His Thr Thr Met Tyr Phe Met Cys Glu Phe Asp Lys Glu Asn

Met

<210> 358

<211> 972

<212> DNA

<213> Homo sapiens

<400> 358

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aggcaccatg aggatcatgc tgctattcac agccatcctg gccttcagcc 200 tagctcagag ctttggggct gtctgtaagg agccacagga ggaggtggtt 250 cctggcgggg gccgcagcaa gagggatcca gatctctacc agctgctcca 300 gagactette aaaageeact catetetgga gggattgete aaageeetga 350 gccaggctag cacagateet aaggaateaa cateteega gaaacgtgae 400 atgcatgact tctttgtggg acttatgggc aagaggagcg tccagccaga 450 gggaaagaca ggacctttct taccttcagt gagggttcct cggccccttc 500 atcccaatca gcttggatcc acaggaaagt cttccctggg aacagaggag 550 cagagacctt tataagactc tcctacggat gtgaatcaag agaacgtccc 600 cagetttggc atceteaagt atceceegag ageagaatag gtacteeact 650 tccggactcc tggactgcat taggaagacc tctttccctg tcccaatccc 700 caggtgcgca cgctcctgtt accctttctc ttccctgttc ttgtaacatt 750 cttgtgcttt gactccttct ccatcttttc tacctgaccc tggtgtggaa 800 actgcatagt gaatatcccc aaccccaatg ggcattgact gtagaatacc 850 ctagagttcc tgtagtgtcc tacattaaaa atataatgtc tctctctatt 900 aaaaaaaaa aa 972

<210> 359

<211> 135

<212> PRT

<213> Homo sapiens

<400> 359

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Ala Gln Ser Phe Gly Ala Val Cys Lys Glu Pro Gln Glu Glu Val 20 25 30

Val Pro Gly Gly Gly Arg Ser Lys Arg Asp Pro Asp Leu Tyr Gln
35 40

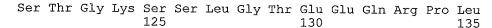
Leu Leu Gln Arg Leu Phe Lys Ser His Ser Ser Leu Glu Gly Leu 50 55 60

Leu Lys Ala Leu Ser Gln Ala Ser Thr Asp Pro Lys Glu Ser Thr 65 70 75

Ser Pro Glu Lys Arg Asp Met His Asp Phe Phe Val Gly Leu Met 80 85 90

Gly Lys Arg Ser Val Gln Pro Glu Gly Lys Thr Gly Pro Phe Leu 95 100 105

Pro Ser Val Arg Val Pro Arg Pro Leu His Pro Asn Gln Leu Gly
110 115 120



<210> 360

<211> 1738

<212> DNA

<213> Homo sapiens

<400> 360

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<210> 361

<211> 159

<212> PRT

<213> Homo sapiens

<400> 361

Leu Val Cys Gly Ser Gln Gly Tyr Leu Leu Pro Asn Val Thr Leu 20 25 30

Leu Glu Glu Leu Leu Ser Lys Tyr Gln His Asn Glu Ser His Ser 35 40 45

Arg Val Arg Arg Ala Ile Pro Arg Glu Asp Lys Glu Glu Ile Leu
50 55 60

Met Leu His Asn Lys Leu Arg Gly Gln Val Gln Pro Gln Ala Ser 65 70 75

Asn Met Glu Tyr Met Val Ser Ala Gly Ser Gly Arg Arg Gly Trp  $80\,$   $85\,$  90

His Arg Gly Trp Gly Leu Gly His Gln Pro Ala Leu Phe Pro Ser 95 100 105

Gln Leu Cys Ser Pro Ala Ser Ala Cys Asp Gly Trp Leu Arg Val 110 115 120

Ser Ser Gly Arg Gly Gly Ser Arg Leu Cys Ser Val Leu Phe Val 125 130 135

Cys Phe Glu Thr Gly Ser His Ser Ala Thr Asp Ala Gly Val Gln 140 145 150

Trp His Asn Arg His Ala Leu Lys Pro

<210> 362

<211> 422

<212> DNA

<213> Homo sapiens

<400> 362

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ggccactatg gggtctgggc tgccccttgt cctcctcttg accctccttg 100 gcagctcaca tggaacaggg ccgggtatga ctttgcaact gaagctgaag 150 gagtcttttc tgacaaattc ctcctatgag tccagcttcc tggaattgct 200 tgaaaagctc tgcctcctcc tccatctccc ttcagggacc agcgtcaccc 250 tccaccatgc aagatctcaa caccatgttg tctgcaacac atgacagcca 300 ttgaagcctg tgtccttctt ggcccgggct tttgggccgg ggatgcagga 350 ggcaggcccc gaccctgtct ttcagcaggc ccccaccctc ctgagtggca 400 ataaataaaa ttcggtatgc tg 422

<210> 363

<211> 78

<212> PRT

<213> Homo sapiens

<400> 363

Met Gly Ser Gly Leu Pro Leu Val Leu Leu Thr Leu Leu Gly

Ser Ser His Gly Thr Gly Pro Gly Met Thr Leu Gln Leu Lys Leu

Lys Glu Ser Phe Leu Thr Asn Ser Ser Tyr Glu Ser Ser Phe Leu

Glu Leu Leu Glu Lys Leu Cys Leu Leu Leu His Leu Pro Ser Gly

Thr Ser Val Thr Leu His His Ala Arg Ser Gln His His Val Val

Cys Asn Thr

<210> 364

<211> 826

<212> DNA

<213> Homo sapiens

<400> 364

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caagtgagtg ttacctttc acttagtagg atgtgttgtt acgctagtaa 500 aatagaaacc tgtgtttatt ctcaggtatt ttagaaacaa cagccatcat 550 tttattttat gtgtgttc ttggctgtat tcataaatta tatatttgg 600 gctatcaaat attacttcat tcaatataaa taacaatagt agaagttgtt 650 tacttagata tgctttctag ttgcatttc tcagcctatg taagactact 700 ttgttgtaat agcctttgaa atttacagta ctgtctctct actatctca 750 gattacttga ttcaaataaa ccaattatgt ttgtaattga tattaataaa 800 accagaataa aagttcatat ctaccc 826

<210> 365 <211> 67 <212> PRT <213> Homo

<213> Homo sapiens

<400> 365

Met Ile Gly Tyr Tyr Leu Ile Leu Phe Leu Met Trp Gly Ser Ser 1 5 10 15

Thr Val Phe Cys Val Leu Leu Ile Phe Thr Ile Ala Glu Ala Ser 20 25 30

Phe Ser Val Glu Asn Glu Cys Leu Val Asp Leu Cys Leu Leu Arg 35 40 45

Ile Cys Tyr Lys Leu Ser Gly Val Pro Asn Gln Cys Arg Val Pro
50 55 60

Leu Pro Ser Asp Cys Ser Lys
65

<210> 366 <211> 2475 <212> DNA <213> Homo sapiens

<400> 366
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ttttgcagga tgatggtggc ccttcgagga gcttctgcat tgctggttct 150

gttccttgca gctttctgc ccccgccgca gtgtacccag gacccagcca 200

tggtgcatta catctaccag cgctttcgag tcttggagca agggctggaa 250

aaatgtaccc aagcaacgag ggcatacatt caagaattcc aagagttctc 300

aaaaaatata tctgtcatgc tgggaagatg tcagacctac acaagtgagt 350

acaagagtgc agtgggtaac ttggcactga gagttgaacg tgcccaacgg 400

gagattgact acatacaata ccttcgagag gctgacgagt gcatcgtatc 450

agagggacaag acactggcag aaatgttgct ccaagaagct gaagaagaga 500

aaaagatccg gactctgctg aatgcaagct gtgacaacat gctgatgggc 550 ataaagtctt tgaaaatagt gaagaagatg atggacacac atggctcttg 600 gatgaaagat gctgtctata actctccaaa ggtgtactta ttaattggat 650 ccagaaacaa cactgtttgg gaatttgcaa acatacgggc attcatggag 700 gataacacca agccagetee eeggaagcaa ateetaacae ttteetggea 750 gggaacaggc caagtgatct acaaaggttt tctatttttt cataaccaag 800 caacttctaa tgagataatc aaatataacc tgcagaagag gactgtggaa 850 gategaatge tgeteecagg aggggtagge egageattgg tttaccagea 900 ctccccctca acttacattg acctggctgt ggatgagcat gggctctggg 950 ccatccactc tgggccaggc acccatagcc atttggttct cacaaagatt 1000 gagccgggca cactgggagt ggagcattca tgggataccc catgcagaag 1050 ccaggatgct gaagcctcat tcctcttgtg tggggttctc tatgtggtct 1100 acagtactgg gggccagggc cetcategea teacetgeat etatgateea 1150 ctgggcacta tcagtgagga ggacttgccc aacttgttct tccccaagag 1200 accaagaagt cactccatga tccattacaa ccccagagat aagcagctct 1250 atgcctggaa tgaaggaaac cagatcattt acaaactcca gacaaagaga 1300 aagctgcctc tgaagtaatg cattacagct gtgagaaaga gcactgtggc 1350 tttggcagct gttctacagg acagtgaggc tatagcccct tcacaatata 1400 gtatccctct aatcacaca aggaagagtg tgtagaagtg gaaatacgta 1450 tgcctccttt cccaaatgtc actgccttag gtatcttcca agagcttaga 1500 tgagagcata tcatcaggaa agtttcaaca atgtccatta ctcccccaaa 1550 cctcctggct ctcaaggatg accacattct gatacagcct acttcaagcc 1600 ttttgtttta ctgctcccca gcatttactg taactctgcc atcttccctc 1650 ccacaattag agttgtatgc cagcccctaa tattcaccac tggcttttct 1700 ctcccctggc ctttgctgaa gctcttccct ctttttcaaa tgtctattga 1750 tattctccca ttttcactgc ccaactaaaa tactattaat atttctttct 1800 tttcttttct ttttttgag acaaggtctc actatgttgc ccaggctggt 1850 ctcaaactcc agagctcaag agatcctcct gcctcagcct cctaagtacc 1900 tgggattaca ggcatgtgcc accacactg gcttaaaata ctattctta 1950 ttgaggttta acctetattt cccctagccc tgtccttcca ctaagcttgg 2000 tagatgtaat aataaagtga aaatattaac atttgaatat cgctttccag 2050 gtgtggagtg tttgcacatc attgaattct cgtttcacct ttgtgaaaca 2100

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<210> 367

<211> 402

<212> PRT

<213> Homo sapiens

<400> 367

Met Met Val Ala Leu Arg Gly Ala Ser Ala Leu Leu Val Leu Phe 1 5 10 15

Leu Ala Ala Phe Leu Pro Pro Pro Gln Cys Thr Gln Asp Pro Ala 20 25 30

Met Val His Tyr Ile Tyr Gln Arg Phe Arg Val Leu Glu Gln Gly 35 40 45

Leu Glu Lys Cys Thr Gln Ala Thr Arg Ala Tyr Ile Gln Glu Phe 50 55 60

Gln Glu Phe Ser Lys Asn Ile Ser Val Met Leu Gly Arg Cys Gln 65 70 75

Thr Tyr Thr Ser Glu Tyr Lys Ser Ala Val Gly Asn Leu Ala Leu 80 85 90

Arg Val Glu Arg Ala Gln Arg Glu Ile Asp Tyr Ile Gln Tyr Leu 95 100 105

Arg Glu Ala Asp Glu Cys Ile Val Ser Glu Asp Lys Thr Leu Ala 110 115 120

Glu Met Leu Leu Gl<br/>n Glu Ala Glu Glu Glu Lys Lys Ile Arg Thr<br/> 125 130 135

Leu Leu Asn Ala Ser Cys Asp Asn Met Leu Met Gly Ile Lys Ser 140 145 150

Leu Lys Ile Val Lys Lys Met Met Asp Thr His Gly Ser Trp Met
155 160 165

Lys Asp Ala Val Tyr Asn Ser Pro Lys Val Tyr Leu Leu Ile Gly
170 175

Ser Arg Asn Asn Thr Val Trp Glu Phe Ala Asn Ile Arg Ala Phe 185 190 195

Met Glu Asp Asn Thr Lys Pro Ala Pro Arg Lys Gln Ile Leu Thr 200 205 210

Leu Ser Trp Gln Gly Thr Gly Gln Val Ile Tyr Lys Gly Phe Leu 215 Phe Phe His Asn Gln Ala Thr Ser Asn Glu Ile Ile Lys Tyr Asn 230 235 240 Leu Gln Lys Arg Thr Val Glu Asp Arg Met Leu Leu Pro Gly Gly 250 255 Val Gly Arg Ala Leu Val Tyr Gln His Ser Pro Ser Thr Tyr Ile 270 Asp Leu Ala Val Asp Glu His Gly Leu Trp Ala Ile His Ser Gly 275 Pro Gly Thr His Ser His Leu Val Leu Thr Lys Ile Glu Pro Gly 290 295 300 Thr Leu Gly Val Glu His Ser Trp Asp Thr Pro Cys Arg Ser Gln 305 310 315 Asp Ala Glu Ala Ser Phe Leu Leu Cys Gly Val Leu Tyr Val Val 320 Tyr Ser Thr Gly Gly Gln Gly Pro His Arg Ile Thr Cys Ile Tyr 335 345 Asp Pro Leu Gly Thr Ile Ser Glu Glu Asp Leu Pro Asn Leu Phe 360 Phe Pro Lys Arg Pro Arg Ser His Ser Met Ile His Tyr Asn Pro 365 375 Arg Asp Lys Gln Leu Tyr Ala Trp Asn Glu Gly Asn Gln Ile Ile 380 Tyr Lys Leu Gln Thr Lys Arg Lys Leu Pro Leu Lys 395

<210> 368

<211> 2281

<212> DNA

<213> Homo sapiens

<400> 368

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ctggccctga tggcgacggc ggcggtagcg cgggggtggc tgcgcggggg 150
ggagggagag agcggccggc ccgcctgcca aaaagcaaat ggatttccac 200
ctgacaaatc ttcgggatcc aagaagcaga aacaatatca gcggattcgg 250
aaggagaagc ctcaacaaca caacttcacc caccgcctcc tggctgcagc 300
tctgaagagc cacagcgga acatatcttg catggacttt agcagcaatg 350
gcaaatacct ggctacctgt gcagatgatc gcaccatccg catctggagc 400
accaaggact tcctgcagcg agagcaccgc agcatgagag ccaacgtgga 450

gctggaccac gccaccctgg tgcgcttcag ccctgactgc agagccttca 500 tcgtctggct ggccaacggg gacaccctcc gtgtcttcaa gatgaccaag 550 cgggaggatg ggggctacac cttcacagcc accccagagg acttccctaa 600 aaagcacaag gcgcctgtca tcgacattgg cattgctaac acagggaagt 650 ttatcatgac tgcctccagt gacaccactg tcctcatctg gagcctgaag 700 ggtcaagtgc tgtctaccat caacaccaac cagatgaaca acacacacgc 750 tgctgtatct ccctgtggca gatttgtagc ctcgtgtggc ttcaccccag 800 atgtgaaggt ttgggaagtc tgctttggaa agaaggggga gttccaggag 850 gtggtgcgag ccttcgaact aaagggccac tccgcggctg tgcactcgtt 900 tgctttctcc aacgactcac ggaggatggc ttctgtctcc aaggatggta 950 catggaaact gtgggacaca gatgtggaat acaagaagaa gcaggacccc 1000 tacttgctga agacaggccg ctttgaagag gcggcgggtg ccgcgccgtg 1050 ccgcctggcc ctctccccca acgcccaggt cttggccttg gccagtggca 1100 gtagtattca tctctacaat acccggcggg gcgagaagga ggagtgcttt 1150 gagegggtee atggegagtg tategeeaac ttgteetttg acateaetgg 1200 ccgctttctg gcctcctgtg gggaccgggc ggtgcggctg tttcacaaca 1250 ctcctggcca ccgagccatg gtggaggaga tgcagggcca cctgaagcgg 1300 gcctccaacg agagcacccg ccagaggctg cagcagcagc tgacccaggc 1350 ccaagagacc ctgaagagcc tgggtgccct gaagaagtga ctctgggagg 1400 gcccggcgca gaggattgag gaggagggat ctggcctcct catggcactg 1450 ctgccatctt tcctcccagg tggaagcctt tcagaaggag tctcctggtt 1500 ttcttactgg tggccctgct tcttcccatt gaaactactc ttgtctactt 1550 aggtetetet ettettgetg getgtgaete etecetgaet agtggecaag 1600 gtgcttttct tcctcccagg cccagtgggt ggaatctgtc cccacctggc 1650 tggccttgtg gcagcacatc ctcacaccca aagaagtttg taaatgttcc 1750 agaacaacct agagaacacc tgagtactaa gcagcagttt tgcaaggatg 1800 ggagactggg atagcttccc atcacagaac tgtgttccat caaaaagaca 1850 ctaagggatt tccttctggg cctcagttct atttgtaaga tggagaataa 1900 tcctctctgt gaactccttg caaagatgat atgaggctaa gagaatatca 1950 agtccccagg tctggaagaa aagtagaaaa gagtagtact attgtccaat 2000 gtcatgaaag tggtaaaagt gggaaccagt gtgctttgaa accaaattag 2050

<210> 369

<211> 447

<212> PRT

<213> Homo sapiens

<400> 369

Met Glu Leu Ser Gln Met Ser Glu Leu Met Gly Leu Ser Val Leu 1 5 10 15

Leu Gly Leu Leu Ala Leu Met Ala Thr Ala Ala Val Ala Arg Gly
20 25 30

Trp Leu Arg Ala Gly Glu Glu Arg Ser Gly Arg Pro Ala Cys Gln 35 40 45

Lys Ala Asn Gly Phe Pro Pro Asp Lys Ser Ser Gly Ser Lys 50 55 60

Gln Lys Gln Tyr Gln Arg Ile Arg Lys Glu Lys Pro Gln Gln His
65 70 75

Asn Phe Thr His Arg Leu Leu Ala Ala Leu Lys Ser His Ser 80 85 90

Gly Asn Ile Ser Cys Met Asp Phe Ser Ser Asn Gly Lys Tyr Leu 95 100 105

Ala Thr Cys Ala Asp Asp Arg Thr Ile Arg Ile Trp Ser Thr Lys 110 115 120

Asp Phe Leu Gln Arg Glu His Arg Ser Met Arg Ala Asn Val Glu 125 130 135

Leu Asp His Ala Thr Leu Val Arg Phe Ser Pro Asp Cys Arg Ala 140 145 150

Phe Ile Val Trp Leu Ala Asn Gly Asp Thr Leu Arg Val Phe Lys 155 160 165

Met Thr Lys Arg Glu Asp Gly Gly Tyr Thr Phe Thr Ala Thr Pro 170 175 180

Glu Asp Phe Pro Lys Lys His Lys Ala Pro Val Ile Asp Ile Gly 185 190 195

Ile Ala Asn Thr Gly Lys Phe Ile Met Thr Ala Ser Ser Asp Thr 200 205 210

Thr Val Leu Ile Trp Ser Leu Lys Gly Gln Val Leu Ser Thr Ile 215 220 225

Asn Thr Asn Gln Met Asn Asn Thr His Ala Ala Val Ser Pro Cys 230 235 240

Gly Arg Phe Val Ala Ser Cys Gly Phe Thr Pro Asp Val Lys Val 245 Trp Glu Val Cys Phe Gly Lys Lys Gly Glu Phe Gln Glu Val Val 260 Arg Ala Phe Glu Leu Lys Gly His Ser Ala Ala Val His Ser Phe Ala Phe Ser Asn Asp Ser Arg Met Ala Ser Val Ser Lys Asp 290 300 Gly Thr Trp Lys Leu Trp Asp Thr Asp Val Glu Tyr Lys Lys 305 Gln Asp Pro Tyr Leu Leu Lys Thr Gly Arg Phe Glu Glu Ala Ala 320 325 Gly Ala Ala Pro Cys Arg Leu Ala Leu Ser Pro Asn Ala Gln Val 335 340 Leu Ala Leu Ala Ser Gly Ser Ser Ile His Leu Tyr Asn Thr Arg 355 Arg Gly Glu Lys Glu Glu Cys Phe Glu Arg Val His Gly Glu Cys 365 Ile Ala Asn Leu Ser Phe Asp Ile Thr Gly Arg Phe Leu Ala Ser 385 Cys Gly Asp Arg Ala Val Arg Leu Phe His Asn Thr Pro Gly His 400 Arg Ala Met Val Glu Glu Met Gln Gly His Leu Lys Arg Ala Ser 410 Asn Glu Ser Thr Arg Gln Arg Leu Gln Gln Gln Leu Thr Gln Ala 425 430 Gln Glu Thr Leu Lys Ser Leu Gly Ala Leu Lys Lys

<210> 370

<211> 1415

<212> DNA

<213> Homo sapiens

<400> 370

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gtgatcacag gggcctgtga gcgggatgtc cagtgtgggg caggcacctg 200
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445

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<210> 371

<211> 105

<212> PRT

<213> Homo sapiens

<400> 371

Met Arg Gly Ala Thr Arg Val Ser Ile Met Leu Leu Val Thr  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Val Ser Asp Cys Ala Val Ile Thr Gly Ala Cys Glu Arg Asp Val  $20 \\ 25 \\ 30$ 

Gln Cys Gly Ala Gly Thr Cys Cys Ala Ile Ser Leu Trp Leu Arg 35 40 45

Gly Leu Arg Met Cys Thr Pro Leu Gly Arg Glu Gly Glu Cys
50 55 60

His Pro Gly Ser His Lys Val Pro Phe Phe Arg Lys Arg Lys His
65 70 75

His Thr Cys Pro Cys Leu Pro Asn Leu Leu Cys Ser Arg Phe Pro 80 85 90

Asp Gly Arg Tyr Arg Cys Ser Met Asp Leu Lys Asn Ile Asn Phe 95 100 105

<210> 372

<211> 1281

<212> DNA

<213> Homo sapiens

<400> 372

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<210> 373
<211> 229
<212> PRT
<213> Homo sapiens
<400> 373
Met Ser Phe Leu Gln Asp Pro Ser Phe Phe Thr Met Gly Met Trp
 Ser Ile Gly Ala Gly Ala Leu Gly Ala Ala Leu Ala Leu Leu
 Leu Ala Asn Thr Asp Val Phe Leu Ser Lys Pro Gln Lys Ala Ala
 Leu Glu Tyr Leu Glu Asp Ile Asp Leu Lys Thr Leu Glu Lys Glu
 Pro Arg Thr Phe Lys Ala Lys Glu Leu Trp Glu Lys Asn Gly Ala
 Val Ile Met Ala Val Arg Arg Pro Gly Cys Phe Leu Cys Arg Glu
 Glu Ala Ala Asp Leu Ser Ser Leu Lys Ser Met Leu Asp Gln Leu
 Gly Val Pro Leu Tyr Ala Val Val Lys Glu His Ile Arg Thr Glu
                                     115
 Val Lys Asp Phe Gln Pro Tyr Phe Lys Gly Glu Ile Phe Leu Asp
                 125
                                     130
 Glu Lys Lys Lys Phe Tyr Gly Pro Gln Arg Arg Lys Met Met Phe
 Met Gly Phe Ile Arg Leu Gly Val Trp Tyr Asn Phe Phe Arg Ala
                 155
                                     160
 Trp Asn Gly Gly Phe Ser Gly Asn Leu Glu Gly Glu Gly Phe Ile
                 170
 Leu Gly Gly Val Phe Val Val Gly Ser Gly Lys Gln Gly Ile Leu
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 Leu Glu His Arg Glu Lys Glu Phe Gly Asp Lys Val Asn Leu Leu
 Ser Val Leu Glu Ala Ala Lys Met Ile Lys Pro Gln Thr Leu Ala
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Ser Glu Lys Lys

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<211> 744

<212> DNA

<213> Homo sapiens

<400> 374

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<210> 375

<211> 123

<212> PRT

<213> Homo sapiens

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Phe Leu Leu Ala Arg Trp Gly Arg Ala Trp Gly Gln Ile Gln Thr 20 25 30

Thr Ser Ala Asn Glu Asn Ser Thr Val Leu Pro Ser Ser Thr Ser 35 40 45

Ser Ser Ser Asp Gly Asn Leu Arg Pro Glu Ala Ile Thr Ala Ile
50 55 60

Ile Val Val Phe Ser Leu Leu Ala Ala Leu Leu Leu Ala Val Gly 65 70 75

Leu Ala Leu Leu Val Arg Lys Leu Arg Glu Lys Arg Gln Thr Glu
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Gly Thr Tyr Arg Pro Ser Ser Glu Glu Gln Phe Ser His Ala Ala 95 100 105

Leu Pro Ile

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<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Homo sapiens

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<210> 377

<211> 90

<212> PRT

<213> Homo sapiens

<400> 377

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Phe Leu Ser Arg Asn Lys Glu Asn His Ser Gln Pro Thr Gln Ser 35 40 45

Ser Leu Glu Asp Ser Val Thr Pro Thr Lys Ala Val Lys Thr Thr 50 60

Gly Lys Gly Ile Val Lys Gly Arg Asn Leu Asp Ser Arg Gly Leu 65 70 75

Ile Leu Gly Ala Glu Ala Trp Gly Arg Gly Val Lys Lys Asn Thr 80 85 90

<210> 378

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<212> DNA

<213> Homo sapiens

<400> 378

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<211> 919

<212> PRT

<213> Homo sapiens

<400> 379

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Phe Glu Asp Ile Val Ile Val Ile Asp Pro Ser Val Pro Glu Asp 35 40 45

Glu Lys Ile Ile Glu Gln Ile Glu Asp Met Val Thr Thr Ala Ser
50 55 60

Thr Tyr Leu Phe Glu Ala Thr Glu Lys Arg Phe Phe Lys Asn
65 70 75

Val Ser Ile Leu Ile Pro Glu Asn Trp Lys Glu Asn Pro Gln Tyr 80 85 90

Lys Arg Pro Lys His Glu Asn His Lys His Ala Asp Val Ile Val  $95 \hspace{1.5cm} 100 \hspace{1.5cm} 105$ 

Ala Pro Pro Thr Leu Pro Gly Arg Asp Glu Pro Tyr Thr Lys Gln
110 115 120

Phe Thr Glu Cys Gly Glu Lys Gly Glu Tyr Ile His Phe Thr Pro 125 130 135

Asp Leu Leu Gly Lys Lys Gln Asn Glu Tyr Gly Pro Pro Gly
140 145 150

Lys Leu Phe Val His Glu Trp Ala His Leu Arg Trp Gly Val Phe \$155\$ 160 \$165

Asp Glu Tyr Asn Glu Asp Gln Pro Phe Tyr Arg Ala Lys Ser Lys 170 175

Lys Ile Glu Ala Thr Arg Cys Ser Ala Gly Ile Ser Gly Arg Asn 185 190

Arg Val Tyr Lys Cys Gln Gly Gly Ser Cys Leu Ser Arg Ala Cys 200 205

Arg Ile Asp Ser Thr Thr Lys Leu Tyr Gly Lys Asp Cys Gln Phe 215 220 225

Phe Pro Asp Lys Val Gln Thr Glu Lys Ala Ser Ile Met Phe Met 230 235

Gln Ser Ile Asp Ser Val Val Glu Phe Cys Asn Glu Lys Thr His 245 250 255

Asn Gln Glu Ala Pro Ser Leu Gln Asn Ile Lys Cys Asn Phe Arg 260 265 270

Ser Thr Trp Glu Val Ile Ser Asn Ser Glu Asp Phe Lys Asn Thr

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Lys	Ile	e Se:	c Glr	a Arg 305	ı Ile	val	Суз	Leu	Val 310		Asp	Lys	Sei	Gly 315
Ser	Met	: Gly	7 Gly	, Lys 320	Asp	Arg	Leu	Asn	Arg 325		Asn	Gln	ı Ala	Ala 330
Lys	His	s Phe	e Leu	1 Leu 335	Gln	Thr	Val	Glu	Asn 340	Gly	Ser	Trp	Val	Gly 345
Met	Val	His	Ph∈	350	Ser	Thr	Ala	Thr	Ile 355	Val	Asn	Lys	Leu	Ile 360
Gln	Ile	. Lys	Ser	Ser 365	Asp	Glu	Arg	Asn	Thr 370	Leu	Met	Ala	Gly	Leu 375
Pro	Thr	Туг	Pro	Leu 380	Gly	Gly	Thr	Ser	Ile 385	Cys	Ser	Gly	Ile	Lys 390
Tyr	Ala	Phe	Gln	. Val 395	Ile	Gly	Glu	Leu	His 400	Ser	Gln	Leu	Asp	Gly 405
Ser	Glu	Val	Leu	Leu 410	Leu	Thr	Asp	Gly	Glu 415	Asp	Asn	Thr	Ala	Ser 420
Ser	Cys	Ile	Asp	Glu 425	Val	Lys	Gln	Ser	Gly 430	Ala	Ile	Val	His	Phe 435
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Lys	Ile	Thr	Gly	Gly 455	Ser	His	Phe	Tyr	Val 460	Ser	Asp	Glu	Ala	Gln 465
Asn	Asn	Gly	Leu	Ile 470	Asp	Ala	Phe	Gly	Ala 475	Leu	Thr	Ser	Gly	Asn 480
Thr	Asp	Leu	Ser	Gln 485	Lys	Ser	Leu	Gln	Leu 490	Glu	Ser	Lys	Gly	Leu 495
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Ser	Thr	Val	Gly	Lys 515	Asp	Thr	Phe	Phe	Leu 520	Ile	Thr	Trp	Asn	Ser 525
Leu	Pro	Pro	Ser	Ile 530	Ser	Leu	Trp	Asp	Pro 535	Ser	Gly	Thr	Ile	Met 540
Glu 1	Asn	Phe	Thr	Val 545	Asp	Ala	Thr	Ser	Lys 550	Met	Ala	Tyr	Leu	Ser 555
Ile :	Pro	Gly	Thr	Ala 560	Lys	Val	Gly	Thr	Trp 565	Ala	Tyr	Asn	Leu	Gln 570
Ala 1	Lys	Ala	Asn	Pro 575	Glu	Thr	Leu		Ile 580	Thr	Val	Thr	Ser	Arg 585
Ala A	Ala	Asn	Ser	Ser	Val	Pro	Pro	Ile	Thr	Val	Asn	Ala	Lys	Met

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Asn	ı Ly:	s Ası	o Vai	l Ası 60!	n Sei 5	r Phe	e Pro	Ser	Pro 610		∶Il∈	val	Туз	Ala 615
Glu	ı Ile	e Lei	ı Glı	n Gly 620	у Туг )	r Val	L Pro	Val	Leu 625	Gly	Ala	. Asr	ı Val	Thr 630
Ala	Phe	e Ile	e Glu	1 Sen 635	Glr	n Asr	ı Gly	7 His	Thr 640		Val	Let	ı Glu	Leu 645
Leu	Asp	Asr	ı Gly	7 Ala 650	a Gly	Ala	Asp	) Ser	Phe 655		Asn	Asp	Gly	7 Val 660
Tyr	Ser	Arç	ј Туг	Phe 665	Thr	: Ala	Tyr	Thr	Glu 670	Asn	Gly	Arg	Туг	Ser 675
Leu	Lys	Val	Arç	Ala 680	His	Gly	Gly	Ala	Asn 685	Thr	Ala	Arg	Leu	Lys 690
Leu	Arg	Pro	Pro	695	Asn	Arg	Ala	Ala	Tyr 700	Ile	Pro	Gly	Trp	Val 705
Val	Asn	Gly	glu	Ile 710	Glu	Ala	Asn	Pro	Pro 715	Arg	Pro	Glu	Ile	Asp 720
Glu	Asp	Thr	Gln	Thr 725	Thr	Leu	Glu	Asp	Phe 730	Ser	Arg	Thr	Ala	Ser 735
Gly	Gly	Ala	Phe	Val 740	Val	Ser	Gln	Val	Pro 745	Ser	Leu	Pro	Leu	Pro 750
Asp	Gln	Tyr	Pro	Pro 755	Ser	Gln	Ile	Thr	Asp 760	Leu	Asp	Ala	Thr	Val 765
His	Glu	Asp	Lys	Ile 770	Ile	Leu	Thr	Trp	Thr 775	Ala	Pro	Gly	Asp	Asn 780
Phe	Asp	Val	Gly	Lys 785	Val	Gln	Arg	Tyr	Ile 790	Ile	Arg	Ile	Ser	Ala 795
Ser	Ile	Leu	Asp	Leu 800	Arg	Asp	Ser	Phe	Asp 805	Asp	Ala	Leu	Gln	Val 810
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Phe	Ala	Phe	Lys	Pro 830	Glu	Asn	Ile	Ser	Glu 835	Glu	Asn	Ala	Thr	His 840
Ile	Phe	Ile	Ala	Ile 845	Lys	Ser	Ile	Asp	Lys 850	Ser	Asn	Leu	Thr	Ser 855
Lys	Val	Ser	Asn	Ile 860	Ala	Gln	Val	Thr	Leu 865	Phe	Ile	Pro	Gln	Ala 870
Asn	Pro	Asp	Asp	Ile 875	Asp	Pro	Thr	Pro	Thr 880	Pro	Thr	Pro	Thr	Pro 885
Thr	Pro	Asp	Lys	Ser 890	His	Asn	Ser	Gly	Val 895	Asn	Ile	Ser	Thr	Leu 900
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Ser Thr Thr Ile

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<210> 381

<211> 532

<212> PRT

<213> Homo sapiens

<400> 381

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35

Pro Arg Ala Asn Ser Pro Thr Gly Lys Glu Gly Tyr Gln Ala Val
50 55

Leu Gln Glu Trp Glu Glu Gln His Arg Asn Tyr Val Ser Ser Leu 65 70 75

Lys Arg Gln Ile Ala Gln Leu Lys Glu Glu Leu Gln Glu Arg Ser 80 85 90

Glu Gln Leu Arg Asn Gly Gln Tyr Gln Ala Ser Asp Ala Ala Gly Leu Gly Leu Asp Arg Ser Pro Pro Glu Lys Thr Gln Ala Asp Leu 110 115 Leu Ala Phe Leu His Ser Gln Val Asp Lys Ala Glu Val Asn Ala Gly Val Lys Leu Ala Thr Glu Tyr Ala Ala Val Pro Phe Asp Ser Phe Thr Leu Gln Lys Val Tyr Gln Leu Glu Thr Gly Leu Thr Arg 155 160 His Pro Glu Glu Lys Pro Val Arg Lys Asp Lys Arg Asp Glu Leu Val Glu Ala Ile Glu Ser Ala Leu Glu Thr Leu Asn Asn Pro Ala Glu Asn Ser Pro Asn His Arg Pro Tyr Thr Ala Ser Asp Phe Ile 200 205 Glu Gly Ile Tyr Arg Thr Glu Arg Asp Lys Gly Thr Leu Tyr Glu 215 Leu Thr Phe Lys Gly Asp His Lys His Glu Phe Lys Arg Leu Ile Leu Phe Arg Pro Phe Ser Pro Ile Met Lys Val Lys Asn Glu Lys Leu Asn Met Ala Asn Thr Leu Ile Asn Val Ile Val Pro Leu Ala Lys Arg Val Asp Lys Phe Arg Gln Phe Met Gln Asn Phe Arg Glu 280 Met Cys Ile Glu Gln Asp Gly Arg Val His Leu Thr Val Val Tyr 290 295 Phe Gly Lys Glu Glu Ile Asn Glu Val Lys Gly Ile Leu Glu Asn 305 310 Thr Ser Lys Ala Ala Asn Phe Arg Asn Phe Thr Phe Ile Gln Leu Asn Gly Glu Phe Ser Arg Gly Lys Gly Leu Asp Val Gly Ala Arg Phe Trp Lys Gly Ser Asn Val Leu Leu Phe Phe Cys Asp Val Asp 355 Ile Tyr Phe Thr Ser Glu Phe Leu Asn Thr Cys Arg Leu Asn Thr 365 370 Gln Pro Gly Lys Lys Val Phe Tyr Pro Val Leu Phe Ser Gln Tyr 380 385 Asn Pro Gly Ile Ile Tyr Gly His His Asp Ala Val Pro Pro Leu

400

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 Val His Leu Tyr Arg Lys Tyr Leu His Ser Asn Leu Ile Val Val
                 455
 Arg Thr Pro Val Arg Gly Leu Phe His Leu Trp His Glu Lys Arg
                 470
                                      475
 Cys Met Asp Glu Leu Thr Pro Glu Gln Tyr Lys Met Cys Met Gln
 Ser Lys Ala Met Asn Glu Ala Ser His Gly Gln Leu Gly Met Leu
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 Val Phe Arg His Glu Ile Glu Ala His Leu Arg Lys Gln Lys Gln
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Lys Thr Ser Ser Lys Lys Thr
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ctcttcaaag cgatggtagc tttctccatg agaaaagttc ccaacagaga 200
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tttagaaata agatcaggca tatgtatata ttttcacact tcaaagacct 1000
aaggaaaaat aaattttcca gtggagaata catataatat ggtgtagaaa 1050
tcattgaaaa tggatccttt ttgacgatca cttatatcac tctgtatatg 1100
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gttgattata tattttctga atatcagccc ctaataggac aattctattt 1250

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<210> 387

<211> 212

<212> PRT

<213> Homo sapiens

<400> 387

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Leu Cys Gln Pro Gly Ala Glu Asn Ala Phe Lys Val Arg Leu Ser 20 25 30

Ile Arg Thr Ala Leu Gly Asp Lys Ala Tyr Ala Trp Asp Thr Asn 35 40 45

Glu Glu Tyr Leu Phe Lys Ala Met Val Ala Phe Ser Met Arg Lys 50 55 60

Val Pro Asn Arg Glu Ala Thr Glu Ile Ser His Val Leu Leu Cys
65 70 75

Asn Val Thr Gln Arg Val Ser Phe Trp Phe Val Val Thr Asp Pro  $80\ . \ \ 85\ \ 90$ 

Ser Lys Asn His Thr Leu Pro Ala Val Glu Val Gln Ser Ala Ile 95 100 105

Arg Met Asn Lys Asn Arg Ile Asn Asn Ala Phe Phe Leu Asn Asp 110 115 120

Gln Thr Leu Glu Phe Leu Lys Ile Pro Ser Thr Leu Ala Pro Pro 125 130 135

Met Asp Pro Ser Val Pro Ile Trp Ile Ile Ile Phe Gly Val Ile 140 145 150

Phe Cys Ile Ile Ile Val Ala Ile Ala Leu Leu Ile Leu Ser Gly
155 160 165

Ile Trp Gln Arg Arg Arg Lys Asn Lys Glu Pro Ser Glu Val Asp 170 175 180

Asp Ala Glu Asp Lys Cys Glu Asn Met Ile Thr Ile Glu Asn Gly 185 190 190

Ile Pro Ser Asp Pro Leu Asp Met Lys Gly Gly Ile Leu Met Met 200 205

Pro Ser

<210> 388

<211> 1371

<212> DNA

<213> Homo sapiens

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<sup>&</sup>lt;210> 389

<sup>&</sup>lt;211> 215

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 389

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1 5 10 15

Ile Gln Leu Thr Ala Leu Trp Pro Ile Ala Ala Val Glu Ile Tyr Thr Ser Arg Val Leu Glu Ala Val Asn Gly Thr Asp Ala Arg Leu Lys Cys Thr Phe Ser Ser Phe Ala Pro Val Gly Asp Ala Leu Thr Val Thr Trp Asn Phe Arg Pro Leu Asp Gly Gly Pro Glu Gln Phe Val Phe Tyr Tyr His Ile Asp Pro Phe Gln Pro Met Ser Gly Arg Phe Lys Asp Arg Val Ser Trp Asp Gly Asn Pro Glu Arg Tyr Asp Ala Ser Ile Leu Leu Trp Lys Leu Gln Phe Asp Asp Asn Gly Thr 110 115 120 Tyr Thr Cys Gln Val Lys Asn Pro Pro Asp Val Asp Gly Val Ile Gly Glu Ile Arg Leu Ser Val Val His Thr Val Arg Phe Ser Glu Ile His Phe Leu Ala Leu Ala Ile Gly Ser Ala Cys Ala Leu Met 155 160 Ile Ile Val Ile Val Val Leu Phe Gln His Tyr Arg Lys Lys Arg Trp Ala Glu Arg Ala His Lys Val Val Glu Ile Lys Ser 185 Lys Glu Glu Arg Leu Asn Gln Glu Lys Lys Val Ser Val Tyr 210 Leu Glu Asp Thr Asp 215 <210> 390 <211> 24 <212> DNA <213> Artificial Sequence <220> <223> Synthetic oligonucleotide probe <400> 390 ccgaggccat ctagaggcca gagc 24 <210> 391

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<400> 391

acaggcagag ccaatggcca gagc 24

<211> 25

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 tattcatgct tcctgtgatt tcatccaact acttaccttg cctacgatat 400
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<213> Homo sapiens
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 Tyr Pro Ala Thr Gly Pro Ala Asp Asp Glu Ala Pro Asp Ala Glu
 Thr Thr Ala Ala Ala Thr Thr Ala Thr Thr Ala Ala Pro Thr Thr
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Ala Thr Thr Ala Ala Ser Thr Thr Ala Arg Lys Asp Ile Pro Val
Leu Pro Lys Trp Val Gly Asp Leu Pro Asn Gly Arg Val Cys Pro
<210> 395
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<223> Synthetic oligonucleotide probe
<400> 395
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<400> 396
 cagggacaca ctctaccatt cgggag 26
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<210> 398
<211> 907
<212> DNA
<213> Homo sapiens
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 gggcaggacc ccatagggga atgctacctc ctgcccttcc acctgccctg 150
 gtgttcacgg tggcctggtc cctccttgcc gagagagtgt cctgggtcag 200
 ggacgcagag gacgctcaca gactccagcc ctttgttacc gagaggacac 250
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<210> 399

<211> 120

<212> PRT

<213> Homo sapiens

<400> 399

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Trp Ser Leu Leu Ala Glu Arg Val Ser Trp Val Arg Asp Ala Glu 20 25 30

Asp Ala His Arg Leu Gln Pro Phe Val Thr Glu Arg Thr Leu Gly 35 40 45

Lys Val Gln Arg Trp Ser Gly Val His Thr Gln Thr Gly Gly Arg
50 55 60

Ala Gly Gly Gln Phe Cys Cys Ala Trp Leu Asp Ser Lys Arg
65 70 75

Val Leu Ala Ser Pro Gly Trp Gly Ala Ala Asn Ser Ile Lys Asn 80 85 90

Gln Arg Val Trp Ala Pro Ala Thr Glu Ser Ser Ala Gln Leu Leu 95 100 105

Cys Cys Trp Pro Val Gly Val Ala Arg Gly Gly Ala Leu Cys Gl<br/>n 110 115 120

<210> 400

<211> 893

<212> DNA

<213> Homo sapiens

<400> 400

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<210> 401

<211> 198

<212> PRT

<213> Homo sapiens

<400> 401

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Thr Arg Pro Ala Ser Ala Ala Pro Met Gly Gly Pro Glu Leu Ala 20 25 30

Gln His Glu Glu Leu Thr Leu Leu Phe His Gly Thr Leu Gln Leu
35 40 45

Gly Gln Ala Leu Asn Gly Val Tyr Arg Thr Thr Glu Gly Arg Leu
50 55 60

Thr Lys Ala Arg Asn Ser Leu Gly Leu Tyr Gly Arg Thr Ile Glu 65 70 75

Leu Leu Gly Gln Glu Val Ser Arg Gly Arg Asp Ala Ala Gln Glu 80 85 90

Leu Arg Ala Ser Leu Leu Glu Thr Gln Met Glu Glu Asp Ile Leu 95 100 105

Gln Leu Gln Ala Glu Ala Thr Ala Glu Val Leu Gly Glu Val Ala 110 115 120

Gln Ala Gln Lys Val Leu Arg Asp Ser Val Gln Arg Leu Glu Val 125 130 135

Gln Leu Arg Ser Ala Trp Leu Gly Pro Ala Tyr Arg Glu Phe Glu
140 145

Val Leu Lys Ala His Ala Asp Lys Gln Ser His Ile Leu Trp Ala 155 160 165

Leu Thr Gly His Val Gln Arg Gln Arg Glu Met Val Ala Gln
170 175 180

Gln His Arg Leu Arg Gln Ile Gln Glu Arg Leu His Thr Ala Ala

185 190 195

Leu Pro Ala

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<211> 206

<212> PRT

<213> Homo sapiens

<400> 403

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Val Ile Cys Ile Leu Val Ile Thr Leu Leu Leu Asp Gln Thr Thr 20 25 30

Ser His Thr Ser Arg Leu Lys Ala Arg Lys His Ser Lys Arg Arg 45

Val Arg Asp Lys Asp Gly Asp Leu Lys Thr Gln Ile Glu Lys Leu
50 55 60

Trp Thr Glu Val Asn Ala Leu Lys Glu Ile Gln Ala Leu Gln Thr
65 70 75

Val Cys Leu Arg Gly Thr Lys Val His Lys Lys Cys Tyr Leu Ala 80 85 90

Ser Glu Gly Leu Lys His Phe His Glu Ala Asn Glu Asp Cys Ile 95 100 105

Ser Lys Gly Gly Ile Leu Val Ile Pro Arg Asn Ser Asp Glu Ile 110 115 120

Asn Ala Leu Gln Asp Tyr Gly Lys Arg Ser Leu Pro Gly Val Asn 125 130 135

Asp Phe Trp Leu Gly Ile Asn Asp Met Val Thr Glu Gly Lys Phe 140 145

Val Asp Val Asn Gly Ile Ala Ile Ser Phe Leu Asn Trp Asp Arg

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Ala Gln Pro Asn	Gly Gly Lys 170	Arg Glu Asn Cys 175	s Val Leu Phe Ser 180								
Gln Ser Ala Gln	Gly Lys Trp 185	Ser Asp Glu Ala 190	a Cys Arg Ser Ser 195								
Lys Arg Tyr Ile	Cys Glu Phe 200	Thr Ile Pro Lys	3								
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agctcctgct gagca	gcctg ggcato	cccg tgaaccacct	catagagggc 300 ·								
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<210> 408

<211> 104

<212> PRT

<213> Homo sapiens

<400> 408

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Ser Ser Ala Ala Ala Phe Leu Val Gly Ser Ala Lys Pro Val Ala 20 25 30

Gln Pro Val Ala Ala Leu Glu Ser Ala Ala Glu Ala Gly Ala Gly 35 40 45

Thr Leu Ala Asn Pro Leu Gly Thr Leu Asn Pro Leu Lys Leu 50 55 60

Leu Ser Ser Leu Gly Ile Pro Val Asn His Leu Ile Glu Gly Ser
65 70 75

Gln Lys Cys Val Ala Glu Leu Gly Pro Gln Ala Val Gly Ala Val 80 85 90

Lys Ala Leu Lys Ala Leu Gly Ala Leu Thr Val Phe Gly 95 100

<210> 409

<211> 2089

<212> DNA

<213> Homo sapiens

<400> 409

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<210> 410

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Val	Trp	Leu	Val	Pro 20		Leu	Ala	Pro	Ser 25	Pro	Gln	Ser	Pro	Glu 30
Thr	Pro	Ala	Pro	Gln 35	Asn	Gln	Thr	Ser	Arg 40	Val	Val	Gln	Ala	Pro 45
Arg	Glu	Glu	Glu	Glu 50	Asp	Glu	Gln	Glu	Ala 55	Ser	Glu	Glu	Lys	Ala 60
Gly	Glu	Glu	Glu	Lys 65	Ala	Trp	Leu	Met	Ala 70	Ser	Arg	Gln	Gln	Leu 75
Ala	Lys	Glu	Thr	Ser 80	Asn	Phe	Gly	Phe	Ser 85	Leu	Leu	Arg	Lys	Ile 90
Ser	Met	Arg	His	Asp 95	Gly	Asn	Met	Val	Phe 100	Ser	Pro	Phe	Gly	Met 105
Ser	Leu	Ala	Met	Thr 110	Gly	Leu	Met	Leu	Gly 115	Ala	Thr	Gly	Pro	Thr 120
Glu	Thr	Gln	Ile	Lys 125	Arg	Gly	Leu	His	Leu 130	Gln	Ala	Leu	Lys	Pro 135
Thr	Lys	Pro	Gly	Leu 140	Leu	Pro	Ser	Leu	Phe 145	Lys	Gly	Leu	Arg	Glu 150
Thr	Leu	Ser	Arg	Asn 155	Leu	Glu	Leu	Gly	Leu 160	Ser	Gln	Gly	Ser	Phe 165
Ala	Phe	Ile	His	Lys 170	Asp	Phe	Asp	Val	Lys 175	Glu	Thr	Phe	Phe	Asn 180
Leu	Ser	Lys	Arg	Tyr 185	Phe	Asp	Thr	Glu	Cys 190	Val	Pro	Met	Asn	Phe 195
Arg	Asn	Ala	Ser	Gln 200	Ala	Lys	Arg	Leu	Met 205	Asn	His	Tyr	Ile	Asn 210
Lys	Glu	Thr	Arg	Gly 215	Lys	Ile	Pro	Lys	Leu 220	Phe	Asp	Glu	Ile	Asn 225
Pro	Glu	Thr	Lys	Leu 230	Ile	Leu	Val	Asp	Tyr 235	Ile	Leu	Phe	Lys	Gly 240
Lys	Trp	Leu	Thr	Pro 245	Phe	Asp	Pro	Val	Phe 250	Thr	Glu	Val	Asp	Thr 255
Phe	His	Leu	Asp	Lys 260	Tyr	Lys	Thr	Ile	Lys 265	Val	Pro	Met	Met	Tyr 270
Gly	Ala	Gly	Lys	Phe 275	Ala	Ser	Thr	Phe	Asp 280	Lys	Asn	Phe	Arg	Cys 285

His Val Leu Lys Leu Pro Tyr Gln Gly Asn Ala Thr Met Leu Val 290 295 Val Leu Met Glu Lys Met Gly Asp His Leu Ala Leu Glu Asp Tyr 305 315 Leu Thr Thr Asp Leu Val Glu Thr Trp Leu Arg Asn Met Lys Thr 320 325 330 Arg Asn Met Glu Val Phe Phe Pro Lys Phe Lys Leu Asp Gln Lys 345 Tyr Glu Met His Glu Leu Leu Arg Gln Met Gly Ile Arg Arg Ile 350 355 Phe Ser Pro Phe Ala Asp Leu Ser Glu Leu Ser Ala Thr Gly Arg 365 Asn Leu Gln Val Ser Arg Val Leu Arg Arg Thr Val Ile Glu Val 380 385 390 Asp Glu Arg Gly Thr Glu Ala Val Ala Gly Ile Leu Ser Glu Ile 395 400 Thr Ala Tyr Ser Met Pro Pro Val Ile Lys Val Asp Arg Pro Phe 415 His Phe Met Ile Tyr Glu Glu Thr Ser Gly Met Leu Leu Phe Leu 425 430 Gly Arg Val Val Asn Pro Thr Leu Leu

<210> 411 <211> 636 <212> DNA

<213> Homo sapiens

## <400> 411

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tgtgggagge aggtgeagte eageaceea aggteeetat eaagatgeaa 150
gteaaacact ggeeeteaga geaggaeeea gagaaggeet ggggegeeeg 200
tgtggtggag eeteeggaga aggaegaeea getggtggtg etgtteeetg 250
teeagaagee gaaactettg accaeegagg agaageeaeg aggteaggge 300
aggggeeeea teetteeagg eaceaaggee tggatggaga eegaggaeae 350
eetgggeegt gteetgagte eegageeega eeatgaeage etgtaeeaee 400
eteegeetga ggaggaeeag ggegaggaga ggeeeeggtt gtgggtgatg 450
eeaaateace aggtgeteet gggaeeggag gaagaeeaag accaeateta 500
eeaceeeeag tagggeteea ggggeeatea etgeeeeege eetgteeeaa 550
ggeeeagget gttgggaetg ggaeeeteee taeeetgeee eagetagaea 600

## aataaacccc agcaggcaaa aaaaaaaaa aaaaaa 636

<210> 412

<211> 151

<212> PRT

<213> Homo sapiens

<400> 412

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Trp Glu Ala Gly Ala Val Pro Ala Pro Lys Val Pro Ile Lys Met
20 25 30

Gln Val Lys His Trp Pro Ser Glu Gln Asp Pro Glu Lys Ala Trp
35 40 45

Gly Ala Arg Val Val Glu Pro Pro Glu Lys Asp Asp Gln Leu Val
50 55 60

Val Leu Phe Pro Val Gln Lys Pro Lys Leu Leu Thr Thr Glu Glu 65 70 75

Lys Pro Arg Gly Gln Gly Arg Gly Pro Ile Leu Pro Gly Thr Lys 80 85 90

Ala Trp Met Glu Thr Glu Asp Thr Leu Gly Arg Val Leu Ser Pro 95 100 105

Glu Pro Asp His Asp Ser Leu Tyr His Pro Pro Pro Glu Glu Asp 110 115 120

Gln Gly Glu Glu Arg Pro Arg Leu Trp Val Met Pro Asn His Gln 125 130 135

Val Leu Leu Gly Pro Glu Glu Asp Gln Asp His Ile Tyr His Pro 140 145 150

Gln

<210> 413

<211> 1176

<212> DNA

<213> Homo sapiens

<400> 413

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caatgaacca actcagcttc ctgctgtttc tcatagcgac caccagagga 150
tggagtacag atgaggctaa tacttacttc aaggaatgga cctgttcttc 200
gtctccatct ctgcccagaa gctgcaagga aatcaaagac gaatgtccta 250
gtgcatttga tggcctgtat tttctccgca ctgagaatgg tgttatctac 300
cagaccttct gtgacatgac ctctggggat ggcggctgga ccctggtggc 350
cagcgtgcat gagaatgaca tgcgtggaa gtgcacggt ggcgatcgct 400

ggtccagtca gcagggcagc aaagcagact acccagaggg ggacggcaac 450 tgggccaact acaacactt tggatctgca gaggcggcca cgagcgatga 500 ctacaagaac cctggctact acgacatcca ggccaaggac ctgggcatct 550 ggcacgtgcc caataagtcc cccatgcagc actggagaaa cagctccctg 600 ctgaggtacc gcacggacac tggcttcctc cagacactgg gacataatct 650 gtttggcatc taccagaaat atccagtgaa atatggagaa ggaaagtgtt 700 ggactgacaa cggcccggtg atccctgtgg tctatgattt tggcgacgcc 750 cagaaaacag catcttatta ctcaccctat ggccagcggg aattcactgc 800 gggatttgtt cagttcaggg tatttaataa cgagagagca gccaacgcct 850 tgtgtgctgg aatgagggtc accggatgta acactgagca tcactgcatt 900 ggtggaggag gatactttcc agaggccagt ccccagcagt gtggagattt 950 ttctggtttt gattggagtg gatatggaac tcatgttggt tacagcagca 1000 gccgtgagat aactgaggca gctgtgcttc tattctatcg ttgagagttt 1050 tgtgggaggg aacccagacc tctcctccca accatgagat cccaaggatg 1100 gagaacaact tacccagtag ctagaatgtt aatggcagaa gagaaaacaa 1150 taaatcatat tgactcaaga aaaaaa 1176

<210> 414 <211> 313 <212> PRT

<213> Homo sapiens

<400> 414

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Gly Trp Ser Thr Asp Glu Ala Asn Thr Tyr Phe Lys Glu Trp Thr 20 25 30

Cys Ser Ser Ser Pro Ser Leu Pro Arg Ser Cys Lys Glu Ile Lys 35 40 45

Asp Glu Cys Pro Ser Ala Phe Asp Gly Leu Tyr Phe Leu Arg Thr 50 55 60

Glu Asn Gly Val Ile Tyr Gln Thr Phe Cys Asp Met Thr Ser Gly 65 70 75

Gly Gly Gly Trp Thr Leu Val Ala Ser Val His Glu Asn Asp Met 80 85 90

Arg Gly Lys Cys Thr Val Gly Asp Arg Trp Ser Ser Gln Gln Gly 95 100 105

Ser Lys Ala Asp Tyr Pro Glu Gly Asp Gly Asn Trp Ala Asn Tyr 110 115 120

Asn Thr Phe Gly Ser Ala Glu Ala Ala Thr Ser Asp Asp Tyr Lys

Asn Pro Gly Tyr Tyr Asp Ile Gln Ala Lys Asp Leu Gly Ile Trop Misson Val Pro Asn Lys Ser Pro Met Gln His Trp Arg Asn Ser Ser 165 165 165 165 165 165 165 165 165 165															
His Val Pro Asn Lys Ser Pro Met Gln His Trp Arg Asn Ser Ser 165  Leu Leu Arg Tyr Arg Thr Asp Thr Gly Phe Leu Gln Thr Leu Gly 186  His Asn Leu Phe Gly 11e Tyr Gln Lys Tyr Pro Val Lys Tyr Gly 195  Glu Gly Lys Cys Trp Thr Asp Asn Gly Pro Val Ile Pro Val Val 205  Tyr Asp Phe Gly Asp Ala Gln Lys Thr Ala Ser Tyr Tyr Ser Pro 225  Tyr Gly Gln Arg Glu Phe Thr Ala Gly Phe Val Gln Phe Arg 245  Phe Asn Asn Glu Arg Ala Ala Ala Asn Ala Leu Cys Ala Gly Met Arg 265  Val Thr Gly Cys Asn Thr Glu His His Cys Ile Gly Gly Gly 270  Tyr Phe Pro Glu Ala Ser Pro Gln Gln Cys Gly Asp Phe Ser Gly 285  Phe Asp Trp Ser Gly Tyr Gly Thr His Val Gly Tyr Ser Ser Ser 300  Arg Glu Ile Thr Glu Ala Ala Ala Val Leu Leu Phe Tyr Arg 310					125					130					135
Leu Leu Arg Tyr Arg Thr Asp Thr Gly Phe Leu Gln Thr Leu Gly 185  His Asn Leu Phe Gly 11e Tyr Gln Lys Tyr Phe Pro Val Lys Tyr Gly 225  Val Thr Gly Cys Asn Thr Glu His His Cys 12e Gly Asp Phe Ser Gly 270  Tyr Phe Pro Glu Ala Ser Pro Gln Gln Cys Gly Asp Phe Ser Gly 285  Phe Asp Trp Ser Gly Tyr Gly Thr His Val Gly Tyr Ser Ser Ser 300  Arg Glu Ile Thr Glu Ala Ala Ala Val Leu Leu Phe Tyr Arg 310	Asn	Pro	Gly	Tyr	Tyr 140	Asp	Ile	Gln	Ala		Asp	Leu	Gly	Ile	Trp 150
His Asn Leu Phe Gly 11e Tyr Gln Lys Tyr Pro Val Lys Tyr Gly 195  Glu Gly Lys Cys Trp 200 Thr Asp Asn Gly Pro Val Ile Pro Val Val 216  Tyr Asp Phe Gly Asp 215 Ala Gln Lys Thr Ala Ser Tyr Tyr Ser Pro 225  Tyr Gly Gln Arg Glu Phe Thr Ala Gly Phe Val Gln Phe Arg Val 240  Phe Asn Asn Glu Arg Ala Ala Ala Asn Ala Leu Cys Ala Gly Met Arg 255  Val Thr Gly Cys Asn Thr Glu His His Cys Ile Gly Gly Gly 270  Tyr Phe Pro Glu Ala Ser Pro Gln Gln Cys Gly Asp Phe Ser Gly 285  Phe Asp Trp Ser Gly Tyr Gly Thr His Val Gly Tyr Ser Ser 300  Arg Glu Ile Thr Glu Ala Ala Ala Val Leu Leu Phe Tyr Arg	His	Val	Pro	Asn	Lys 155	Ser	Pro	Met	Gln		Trp	Arg	Asn	Ser	Ser 165
Glu Gly Lys Cys Trp Thr Asp Asn Gly Pro Val Ile Pro Val Val 210  Tyr Asp Phe Gly Asp Ala Gln Lys Thr Ala Ser Tyr Tyr Ser Pro 225  Tyr Gly Gln Arg Glu Phe Thr Ala Gly Phe Val Gln Phe Arg Val 230  Phe Asn Asn Glu Arg Ala Ala Asn Ala Leu Cys Ala Gly Met Arg 245  Val Thr Gly Cys Asn Thr Glu His His Cys Ile Gly Gly Gly Gly 270  Tyr Phe Pro Glu Ala Ser Pro Gln Gln Cys Gly Asp Phe Ser Gly 285  Phe Asp Trp Ser Gly Tyr Gly Thr His Val Gly Tyr Ser Ser Ser 300  Arg Glu Ile Thr Glu Ala Ala Ala Val Leu Leu Phe Tyr Arg 310	Leu	Leu	Arg	Tyr		Thr	Asp	Thr	Gly		Leu	Gln	Thr	Leu	Gly 180
Tyr Asp Phe Gly Asp Ala Gln Lys Thr Ala Ser Tyr Tyr Ser Pro 225  Tyr Gly Gln Arg Glu Phe Thr Ala Gly Phe Val Gln Phe Arg Val 230  Phe Asn Asn Glu Arg Ala Ala Asn Ala Leu Cys Ala Gly Met Arg 245  Val Thr Gly Cys Asn Thr Glu His His Cys Ile Gly Gly Gly 270  Tyr Phe Pro Glu Ala Ser Pro Gln Gln Cys Gly Asp Phe Ser Gly 285  Phe Asp Trp Ser Gly Tyr Gly Thr His Val Gly Tyr Ser Ser 300  Arg Glu Ile Thr Glu Ala Ala Ala Val Leu Leu Phe Tyr Arg 300	His	Asn	Leu	Phe		Ile	Tyr	Gln	Lys		Pro	Val	Lys	Tyr	Gly 195
Tyr Gly Gln Arg Glu Phe Thr Ala Gly Phe Val Gln Phe Arg Val 230  Phe Asn Asn Glu Arg Ala Ala Asn Ala Leu 250  Val Thr Gly Cys Asn Thr Glu His His Cys Ile Gly Gly Gly 270  Tyr Phe Pro Glu Ala Ser Pro Gln Gln Cys Gly Asp Phe Ser Gly 285  Phe Asp Trp Ser Gly Tyr Gly Thr His Val Gly Tyr Ser Ser Ser 300  Arg Glu Ile Thr Glu Ala Ala Ala Val Leu Leu Phe Tyr Arg 310	Glu	Gly	Lys	Cys		Thr	Asp	Asn	Gly		Val	Ile	Pro	Val	Val 210
Phe Asn Asn Glu Arg Ala Ala Asn Ala Leu Cys Ala Gly Met Arg 255  Val Thr Gly Cys Asn Thr Glu His His Cys 265  Tyr Phe Pro Glu Ala Ser Pro Gln Gln Cys 280  Phe Asp Trp Ser Gly Tyr Gly Thr His Val 295  Arg Glu Ile Thr Glu Ala Ala Ala Val Leu Leu Phe Tyr Arg 305	Tyr	Asp	Phe	Gly		Ala	Gln	Lys	Thr		Ser	Tyr	Tyr	Ser	Pro 225
Val Thr Gly Cys Asn Thr Glu His His Cys 265  Tyr Phe Pro Glu Ala Ser Pro Gln Gln Cys 280  Phe Asp Trp Ser Gly Tyr Gly Thr His Val Gly Tyr Ser Ser 300  Arg Glu Ile Thr Glu Ala Ala Val Leu Leu Phe Tyr Arg 310	Tyr	Gly	Gln	Arg	Glu 230	Phe	Thr	Ala	Gly		Val	Gln	Phe	Arg	Val 240
Tyr Phe Pro Glu Ala Ser Pro Gln Gln Cys Gly Asp Phe Ser Gly 285  Phe Asp Trp Ser Gly Tyr Gly Thr His Val Gly Tyr Ser Ser Ser 300  Arg Glu Ile Thr Glu Ala Ala Val Leu Leu Phe Tyr Arg 310	Phe	Asn	Asn	Glu	Arg 245	Ala	Ala	Asn	Ala		Cys	Ala	Gly	Met	Arg 255
Phe Asp Trp Ser Gly Tyr Gly Thr His Val Gly Tyr Ser Ser Ser 290  Arg Glu Ile Thr Glu Ala Ala Val Leu Leu Phe Tyr Arg 305	Val	Thr	Gly	Cys	Asn 260	Thr	Glu	His	His		Ile	Gly	Gly	Gly	Gly 270
Arg Glu Ile Thr Glu Ala Ala Val Leu Leu Phe Tyr Arg 305 300	Tyr	Phe	Pro	Glu	Ala 275	Ser	Pro	Gln	Gln		Gly	Asp	Phe	Ser	Gly 285
305 310	Phe	Asp	Trp	Ser	Gly 290	Tyr	Gly	Thr	His		Gly	Tyr	Ser	Ser	Ser 300
	Arg	Glu	Ile	Thr	Glu 305	Ala	Ala	Val	Leu		Phe	Tyr	Arg		
<210> 415	<210>	× 415	,												

<211> 1281

<212> DNA

<213> Homo sapiens

<400> 415

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ccacaatagt tcagtgacat ctgctgcttc atcagtaaca atcacaacaa 550 ctatgcattc tgaagcaaag aaaggatcaa aatttgatac tgggagcttt 600 gttggtggta ttgtattaac gctgggagtt ttatctattc tttacattgg 650 atgcaaaatg tattactcaa gaagaggcat tcggtatcga accatagatg 700 aacatgatgc catcatttaa ggaaatccat ggaccaagga tggaatacag 750 attgatgctg ccctatcaat taattttggt ttattaatag tttaaaacaa 800 tattctcttt ttgaaaatag tataaacagg ccatgcatat aatgtacagt 850 gtattacgta aatatgtaaa gattcttcaa ggtaacaagg gtttgggttt 900 tgaaataaac atctggatct tatagaccgt tcatacaatg gttttagcaa 950 gttcatagta agacaaacaa gtcctatctt ttttttttgg ctggggtggg 1000 ggcattggtc acatatgacc agtaattgaa agacgtcatc actgaaagac 1050 agaatgccat ctgggcatac aaataagaag tttgtcacag cactcaggat 1100 tttgggtatc ttttgtagct cacataaaga acttcagtgc ttttcagagc 1150 tggatatatc ttaattacta atgccacaca gaaattatac aatcaaacta 1200 gatctgaagc ataatttaag aaaaacatca acattttttg tgctttaaac 1250 tgtagtagtt ggtctagaaa caaaatactc c 1281

<210> 416

<211> 208

<212> PRT

<213> Homo sapiens

<400> 416

Met Gly Leu Gly Ala Arg Gly Ala Trp Ala Ala Leu Leu Gly 1 5 10 15

Thr Leu Gln Val Leu Ala Leu Leu Gly Ala Ala His Glu Ser Ala
20 25 30

Ala Met Ala Ala Ser Ala Asn Ile Glu Asn Ser Gly Leu Pro His  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Asn Ser Ser Ala Asn Ser Thr Glu Thr Leu Gln His Val Pro Ser 50 55 60

Asp His Thr Asn Glu Thr Ser Asn Ser Thr Val Lys Pro Pro Thr
65 70 75

Ser Val Ala Ser Asp Ser Ser Asn Thr Thr Val Thr Thr Met Lys 80 85 90

Pro Thr Ala Ala Ser Asn Thr Thr Thr Pro Gly Met Val Ser Thr 95 100 105

Asn Met Thr Ser Thr Thr Leu Lys Ser Thr Pro Lys Thr Thr Ser 110 115 120

Val Ser Gln Asn Thr Ser Gln Ile Ser Thr Ser Thr Met Thr Val

				125					130	135				
Thr	His	Asn	Ser	Ser 140	Val	Thr	Ser	Ala	Ala 145	Ser	Ser	Val	Thr	Ile 150
Thr	Thr	Thr	Met	His 155	Ser	Glu	Ala	Lys	Lys 160	Gly	Ser	Lys	Phe	Asp 165
Thr	Gly	Ser	Phe	Val 170	Gly	Gly	Ile	Val	Leu 175	Thr	Leu	Gly	Val	Leu 180
Ser	Ile	Leu	Tyr	Ile 185	Gly	Cys	Lys	Met	Tyr 190	Tyr	Ser	Arg	Arg	Gly 195
Ile	Arg	Tyr	Arg	Thr 200	Ile	Asp	Glu	His	Asp 205	Ala	Ile	Ile		
<210><211><211>	172	28												

<:

<213> Homo sapiens

<400> 417 cageegggte ecaageetgt geetgageet gageetgage etgageeega 50 gccgggagcc ggtcgcgggg gctccgggct gtgggaccgc tgggccccca 100 gcgatggcga ccctgtgggg aggccttctt cggcttggct ccttgctcag 150 cctgtcgtgc ctggcgcttt ccgtgctgct gctggcgcag ctgtcagacg 200 ccgccaagaa tttcgaggat gtcagatgta aatgtatctg ccctccctat 250 aaagaaaatt ctgggcatat ttataataag aacatatctc agaaagattg 300 tgattgcctt catgttgtgg agcccatgcc tgtgcggggg cctgatgtag 350 aagcatactg tctacgctgt gaatgcaaat atgaagaaag aagctctgtc 400 acaatcaagg ttaccattat aatttatctc tccattttgg gccttctact 450 totgtacatg gtatatotta ototggttga goocatactg aagaggogoo 500 tctttggaca tgcacagttg atacagagtg atgatgatat tggggatcac 550 cagecttttg caaatgcaca egatgtgeta geeegeteee geagtegage 600 caacgtgctg aacaaggtag aatatgcaca gcagcgctgg aagcttcaag 650 tccaagagca gcgaaagtct gtctttgacc ggcatgttgt cctcagctaa 700 ttgggaattg aattcaaggt gactagaaag aaacaggcag acaactggaa 750 agaactgact gggttttgct gggtttcatt ttaatacctt gttgatttca 800 ccaactgttg ctggaagatt caaaactgga agcaaaaact tgcttgattt 850 ttttttcttg ttaacgtaat aatagagaca tttttaaaag cacacagctc 900 aaagtcagcc aataagtctt ttcctatttg tgacttttac taataaaaat 950 aaatctgcct gtaaattatc ttgaagtcct ttacctggaa caagcactct 1000

<210> 418

<211> 198

<212> PRT

<213> Homo sapiens

<400> 418

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Ser Leu Ser Cys Leu Ala Leu Ser Val Leu Leu Leu Ala Gln Leu 20 25 30

Ser Asp Ala Ala Lys Asn Phe Glu Asp Val Arg Cys Lys Cys Ile 35 40 45

Cys Pro Pro Tyr Lys Glu Asn Ser Gly His Ile Tyr Asn Lys Asn 50 55 60

Ile Ser Gln Lys Asp Cys Asp Cys Leu His Val Val Glu Pro Met 65 70 75

Pro Val Arg Gly Pro Asp Val Glu Ala Tyr Cys Leu Arg Cys Glu 80 85 90

Cys Lys Tyr Glu Glu Arg Ser Ser Val Thr Ile Lys Val Thr Ile 95 100 105

Ile Ile Tyr Leu Ser Ile Leu Gly Leu Leu Leu Tyr Met Val 110 115 120

Tyr Leu Thr Leu Val Glu Pro Ile Leu Lys Arg Arg Leu Phe Gly 125 130 135

His Ala Gln Leu Ile Gln Ser Asp Asp Ile Gly Asp His Gln 140 145 150

Pro Phe Ala Asn Ala His Asp Val Leu Ala Arg Ser Arg Ser Arg 155 160 165

Ala Asn Val Leu Asn Lys Val Glu Tyr Ala Gln Gln Arg Trp Lys 170 175 180

Leu Gln Val Gln Glu Gln Arg Lys Ser Val Phe Asp Arg His Val 185 190 195

Val Leu Ser

<210> 419

<211> 681

<212> DNA

<213> Homo sapiens

<400> 419

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tegetetgge ttetgggett gteetggete tgtegetget getgeecaag 100

gccttcctgt cccgcgggaa gcggcaggag ccgccgccga cacctgaagg 150

aaaattgggc cgatttccac ctatgatgca tcatcaccag gcaccctcag 200

atggccagac tcctggggct cgtttccaga ggtctcacct tgccgaggca 250

tttgcaaagg ccaaaggatc aggtggaggt gctggaggag gaggtagtgg 300

aagaggtctg atggggcaga ttattccaat ctacggtttt gggatttttt 350

tatatatact gtacattcta tttaaggtaa gtagaatcat cctaatcata 400

ttacatcaat gaaaatctaa tatggcgata aaaatcattg tctacattaa 450

aacttcttat agttcataaa attatttcaa atccatcatc tctttaaatc 500

ctgcctcctc ttcatgaggt acttaggata gccattattt cagtttcaca 550

taagaatgtt tactcaatgt ttaagtgttt tgccccaaaa ttcacaacta 600

acaaggcaga actaggactt gaacatggat cttttggttc ttaatccagt 650

gagtgataca attcaatgca ctcccctgcc a 681

<210> 420

<211> 128

<212> PRT

<213> Homo sapiens

<400> 420

Met Ala Tyr Ser Thr Val Gln Arg Val Ala Leu Ala Ser Gly Leu
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Val Leu Ala Leu Ser Leu Leu Pro Lys Ala Phe Leu Ser Arg
20 25 30

Gly Lys Arg Gln Glu Pro Pro Pro Thr Pro Glu Gly Lys Leu Gly 35 40 45

<210> 421 <211> 1630 <212> DNA <213> Homo sapiens

<213> Homo s

<400> 421

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<212> PRT

<213> Homo sapiens

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Thr Val His Val Gly Asp Ser Ala Leu Met Gly Cys Val Phe Gln
35 40 45

Ser Thr Glu Asp Lys Cys Ile Phe Lys Ile Asp Trp Thr Leu Ser 50 55 60

Pro Gly Glu His Ala Lys Asp Glu Tyr Val Leu Tyr Tyr Tyr Ser 65 70 75

Asn Leu Ser Val Pro Ile Gly Arg Phe Gln Asn Arg Val His Leu 80 85 90

Met Gly Asp Ile Leu Cys Asn Asp Gly Ser Leu Leu Gln Asp 95 100 105

Val Gln Glu Ala Asp Gln Gly Thr Tyr Ile Cys Glu Ile Arg Leu 110 115 120

Lys Gly Glu Ser Gln Val Phe Lys Lys Ala Val Val Leu His Val 125 130

Leu Pro Glu Glu Pro Lys Glu Leu Met Val His Val Gly Gly Leu
140 145 150

Ile Gln Met Gly Cys Val Phe Gln Ser Thr Glu Val Lys His Val

				155					160					165
Thr	Lys	Val	Glu	Trp 170	Ile	Phe	Ser	Gly	Arg 175	Arg	Ala	Lys	Glu	Glu 180
Ile	Val	Phe	Arg	Tyr 185	Tyr	His	Lys	Leu	Arg 190	Met	Ser	Val	Glu	Tyr 195
Ser	Gln	Ser	Trp	Gly 200	His	Phe	Gln	Asn	Arg 205	Val	Asn	Leu	Val	Gly 210
Asp	Ile	Phe	Arg	Asn 215	Asp	Gly	Ser	Ile	Met 220	Leu	Gln	Gly	Val	Arg 225
Glu	Ser	Asp	Gly	Gly 230	Asn	Tyr	Thr	Cys	Ser 235	Ile	His	Leu	Gly	Asn 240
Leu	Val	Phe	Lys	Lys 245	Thr	Ile	Val	Leu	His 250	Val	Ser	Pro	Glu	Glu 255
Pro	Arg	Thr	Leu	Val 260	Thr	Pro	Ala	Ala	Leu 265	Arg	Pro	Leu	Val	Leu 270
Gly	Gly	Asn	Gln	Leu 275	Val	Ile	Ile	Val	Gly 280	Ile	Val	Cys	Ala	Thr 285
Ile	Leu	Leu	Leu	Pro 290	Val	Leu	Ile	Leu	Ile 295	Val	Lys	Lys	Thr	Cys 300
Gly	Asn	Lys	Ser	Ser 305	Val	Asn	Ser	Thr	Val 310	Leu	Val	Lys	Asn	Thr 315
Lys	Lys	Thr	Asn	Pro 320	Glu	Ile	Lys	Glu	Lys 325	Pro	Cys	His	Phe	Glu 330
Arg	Cys	Glu	Gly	Glu 335	Lys	His	Ile	Tyr	Ser 340	Pro	Ile	Ile	Val	Arg 345
Glu	Val	Ile	Glu	Glu 350	Glu	Glu	Pro	Ser	Glu 355	Lys	Ser	Glu	Ala	Thr 360
Tyr	Met	Thr	Met	His 365	Pro	Val	Trp	Pro	Ser 370	Leu	Arg	Ser	Asp	Arg 375
Asn	Asn	Ser	Leu	Glu 380	Lys	Lys	Ser	Gly	Gly 385	Gly	Met	Pro	Lys	Thr 390
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acatcacctt aaatattaaa actcggaaac cagctctcgt ctccgttggc 250 cctgcatcct cctcctggtg gcgtgtgatg gctttgattc tgctgatcct 300 gtgcgtgggg atggttgtcg ggctggtggc tctggggatt tggtctgtca 350 tgcagcgcaa ttacctacaa gatgagaatg aaaatcgcac aggaactctg 400 caacaattag caaagcgctt ctgtcaatat gtggtaaaac aatcagaact 450 aaagggcact ttcaaaggtc ataaatgcag cccctgtgac acaaactgga 500 gatattatgg agatagctgc tatgggttct tcaggcacaa cttaacatgg 550 gaagagagta agcagtactg cactgacatg aatgctactc tcctgaagat 600 tgacaaccgg aacattgtgg agtacatcaa agccaggact catttaattc 650 gttgggtcgg attatctcgc cagaagtcga atgaggtctg gaagtgggag 700 gatggctcgg ttatctcaga aaatatgttt gagtttttgg aagatggaaa 750 aggaaatatg aattgtgctt attttcataa tgggaaaatg caccctacct 800 tctgtgagaa caaacattat ttaatgtgtg agaggaaggc tggcatgacc 850 aaggtggacc aactacctta atgcaaagag gtggacagga taacacagat 900 aagggcttta ttgtacaata aaagatatgt atgaatgcat cagtagctga 950 aaaaaaaaa aaa 963

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<211> 229

<212> PRT

<213> Homo sapiens

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Arg Val Met Ala Leu Ile Leu Leu Ile Leu Cys Val Gly Met Val 35 40 45

Val Gly Leu Val Ala Leu Gly Ile Trp Ser Val Met Gln Arg Asn 50 55 60

Tyr Leu Gln Asp Glu Asn Glu Asn Arg Thr Gly Thr Leu Gln Gln
65 70 75

Leu Ala Lys Arg Phe Cys Gln Tyr Val Val Lys Gln Ser Glu Leu 80 85 90

Lys Gly Thr Phe Lys Gly His Lys Cys Ser Pro Cys Asp Thr Asn 95 100 105

Trp Arg Tyr Tyr Gly Asp Ser Cys Tyr Gly Phe Phe Arg His Asn 110 115

Leu Thr Trp Glu Glu Ser Lys Gln Tyr Cys Thr Asp Met Asn Ala

125 130 13 Thr Leu Leu Lys Ile Asp Asn Arg Asn Ile Val Glu Tyr Ile Ly														135
Thr	Leu	Leu	Lys	Ile 140	Asp	Asn	Arg	Asn	Ile 145	Val	Glu	Tyr	Ile	Lys 150
Ala	Arg	Thr	His	Leu 155	Ile	Arg	Trp	Val	Gly 160	Leu	Ser	Arg	Gln	Lys 165
Ser	Asn	Glu	Val	Trp 170	Lys	Trp	Glu	Asp	Gly 175	Ser	Val	Ile	Ser	Glu 180
Asn	Met	Phe	Glu	Phe 185	Leu	Glu	Asp	Gly	Lys 190	Gly	Asn	Met	Asn	Cys 195
Ala	Tyr	Phe	His	Asn 200	Gly	Lys	Met	His	Pro 205	Thr	Phe	Cys	Glu	Asn 210
Lys	Lys His Tyr Leu Met Cys Glu Arg Lys Ala Gly Met Thr Lys Val 215 220 225													
Asp Gln Leu Pro														
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<400> 429
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<210> 430
<211> 24
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<210> 466
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cagecegege gggageegga eegeegeegg aggagetegg aeggeatget 150
gagccccctc ctttgctgaa gcccgagtgc ggagaagccc gggcaaacgc 200
aggctaagga gaccaaagcg gcgaagtcgc gagacagcgg acaagcagcg 250
gaggagaagg aggaggaggc gaacccagag aggggcagca aaagaagcgg 300
tggtggtggg cgtcgtggcc atggcggcgg ctatcgccag ctcgctcatc 350
cgtcagaaga ggcaagcccg cgagcgcgag aaatccaacg cctgcaagtg 400
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Pro Ser Lys Gly Lys Thr Ser Cys Asp Lys Asn Lys Leu Asn Val 35 40 45

Phe Ser Arg Val Lys Leu Phe Gly Ser Lys Lys Arg Arg Arg 50 55 60

Arg Pro Glu Pro Gln Leu Lys Gly Ile Val Thr Lys Leu Tyr Ser
65 70 75

Arg Gln Gly Tyr His Leu Gln Leu Gln Ala Asp Gly Thr Ile Asp 80 85 90

Gly Thr Lys Asp Glu Asp Ser Thr Tyr Thr Leu Phe Asn Leu Ile 95 100 105

Pro Val Gly Leu Arg Val Val Ala Ile Gln Gly Val Gln Thr Lys 110 115 120

Leu Tyr Leu Ala Met Asn Ser Glu Gly Tyr Leu Tyr Thr Ser Glu 125 130 135

Leu Phe Thr Pro Glu Cys Lys Phe Lys Glu Ser Val Phe Glu Asn 140 145 150

Tyr Tyr Val Thr Tyr Ser Ser Met Ile Tyr Arg Gln Gln Ser 155 : 160 165

Gly Arg Gly Trp Tyr Leu Gly Leu Asn Lys Glu Gly Glu Ile Met 170 175 180

Lys Gly Asn His Val Lys Lys Asn Lys Pro Ala Ala His Phe Leu 185 190 195

Pro Lys Pro Leu Lys Val Ala Met Tyr Lys Glu Pro Ser Leu His 200 205 210

Asp Leu Thr Glu Phe Ser Arg Ser Gly Ser Gly Thr Pro Thr Lys

215 220 225

Ser Arg Ser Val Ser Gly Val Leu Asn Gly Gly Lys Ser Met Ser 230 235 240

His Asn Glu Ser Thr 245

<210> 496

<211> 1471

<212> DNA

<213> Homo Sapien

<400> 496

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<210> 497

<211> 225

<212> PRT

<213> Homo Sapien

<400> 497

Met Ala Ala Leu Ala Ser Ser Leu Ile Arg Gln Lys Arg Glu Val 1 5 10 15

Arg Glu Pro Gly Gly Ser Arg Pro Val Ser Ala Gln Arg Arg Val
20 25 30

Cys Pro Arg Gly Thr Lys Ser Leu Cys Gln Lys Gln Leu Leu Ile 35 40 45

Leu Leu Ser Lys Val Arg Leu Cys Gly Gly Arg Pro Ala Arg Pro 50 55 60

Asp Arg Gly Pro Glu Pro Gln Leu Lys Gly Ile Val Thr Lys Leu 65 70 75

Phe Cys Arg Gln Gly Phe Tyr Leu Gln Ala Asn Pro Asp Gly Ser 80 85 90

Ile Gln Gly Thr Pro Glu Asp Thr Ser Ser Phe Thr His Phe Asn 95 100 105

Leu Ile Pro Val Gly Leu Arg Val Val Thr Ile Gln Ser Ala Lys 110 115 120

Leu Gly His Tyr Met Ala Met Asn Ala Glu Gly Leu Leu Tyr Ser 125 130 135

Ser Pro His Phe Thr Ala Glu Cys Arg Phe Lys Glu Cys Val Phe 140 145 150

Glu Asn Tyr Tyr Val Leu Tyr Ala Ser Ala Leu Tyr Arg Gln Arg \$155\$ \$160\$

Arg Ser Gly Arg Ala Trp Tyr Leu Gly Leu Asp Lys Glu Gly Gln
170 175

Val Met Lys Gly Asn Arg Val Lys Lys Thr Lys Ala Ala Ala His 185 190 190

Phe Leu Pro Lys Leu Leu Glu Val Ala Met Tyr Gln Glu Pro Ser 200 205

Leu His Ser Val Pro Glu Ala Ser Pro Ser Ser Pro Pro Ala Pro 215 220 225

<210> 498 <211> 744

<212> DNA <213> Homo Sapien

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<210> 499 <211> 247

<212> PRT

<213> Homo Sapien

<400> 499

Met Ala Ala Ala Ile Ala Ser Gly Leu Ile Arg Gln Lys Arg Gln 15

Ala Arg Glu Gln His Trp Asp Arg Pro Ser Ala Ser Arg Arg 20 25 30

Ser Ser Pro Ser Lys Asn Arg Gly Leu Cys Asn Gly Asn Leu Val 35 40

Asp Ile Phe Ser Lys Val Arg Ile Phe Gly Leu Lys Lys Arg Arg 50 55 60

Leu Arg Arg Gln Asp Pro Gln Leu Lys Gly Ile Val Thr Arg Leu
65 70 75

Tyr Cys Arg Gln Gly Tyr Tyr Leu Gln Met His Pro Asp Gly Ala 80 85 90

Leu Asp Gly Thr Lys Asp Asp Ser Thr Asn Ser Thr Leu Phe Asn 95 100 105

Leu Ile Pro Val Gly Leu Arg Val Val Ala Ile Gln Gly Val Lys 110 115 120

Thr	Gly	Leu	Tyr	Ile 125	Ala	Met	Asn	Gly	Glu 130	Gly	Tyr	Leu	Tyr	Pro 135
Ser	Glu	Leu	Phe	Thr 140	Pro	Glu	Cys	Lys	Phe 145	Lys	Glu	Ser	Val	Phe 150
Glu	Asn	Tyr	Tyr	Val 155	Ile	Tyr	Ser	Ser	Met 160	Leu	Tyr	Arg	Gln	Gln 165
Glu	Ser	Gly	Arg	Ala 170	Trp	Phe	Leu	Gly	Leu 175	Asn	Lys	Glu	Gly	Gln 180
Ala	Met	Lys	Gly	Asn 185	Arg	Val	Lys	Lys	Thr 190	Lys	Pro	Ala	Ala	His 195
Phe	Leu	Pro	Lys	Pro 200	Leu	Glu	Val	Ala	Met 205	Tyr	Arg	Glu	Pro	Ser 210
Leu	His	Asp	Val	Gly 215	Glu	Thr	Val	Pro	Lys 220	Pro	Gly	Val	Thr	Pro 225
Ser	Lys	Ser	Thr	Ser 230	Ala	Ser	Ala	Ile	Met 235	Asn	Gly	Gly	Lys	Pro 240
Val	Asn	Lys	Ser	Lys	Thr	Thr								

Val Asn Lys Ser Lys Thr Thr 245

<210> 500

<211> 2906

<212> DNA

<213> Homo Sapien

<400> 500

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<210> 501 <211> 640

<212> PRT

<213> Homo Sapien

<400> 501

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Pro Arg Phe Asn Arg Ala Leu Phe Asp Pro Leu Leu Val Val Leu 20 25 30

Leu Ala Leu Gln Leu Leu Val Val Ala Gly Leu Val Arg Ala Gln 35 40

Thr Cys Pro Ser Val Cys Ser Cys Ser Asn Gln Phe Ser Lys Val
50 55 60

Ile Cys Val Arg Lys Asn Leu Arg Glu Val Pro Asp Gly Ile Ser
65 70 75

Thr Asn Thr Arg Leu Leu Asn Leu His Glu Asn Gln Ile Gln Ile 80 85 90

Ile Lys Val Asn Ser Phe Lys His Leu Arg His Leu Glu Ile Leu 95 100 105

Gln Leu Ser Arg Asn His Ile Arg Thr Ile Glu Ile Gly Ala Phe 110 115 120

Asn Gly Leu Ala Asn Leu Asn Thr Leu Glu Leu Phe Asp Asn Arg 125 130 135

Leu Thr Thr Ile Pro Asn Gly Ala Phe Val Tyr Leu Ser Lys Leu 140 145 150

Lys Glu Leu Trp Leu Arg Asn Asn Pro Ile Glu Ser Ile Pro Ser 155 160 165

Tyr	: Ala	a Phe	e Ası	n Arg	g Ile	Pro	Ser	Let	Arg 175	Arg	, Leu	ı Asp	Lei	Gly 180
Glu	ı Leı	і Гу:	s Ar	g Leu 185	s Ser	Tyr	Ile	e Ser	Glu 190	Gly	Ala	Phe	e Glu	1 Gly 195
Leu	Sei	Ası	n Leu	200	Tyr	Leu	Asn	Leu	Ala 205		Cys	Asr	ı Let	1 Arg 210
Glu	Il€	Pro	) Asr	1 Leu 215	Thr	Pro	Leu	Ile	Lys 220	Leu	Asp	Glu	Leu	225
Leu	Ser	: Gl	y Asn	1 His 230	Leu	Ser	Ala	Ile	Arg 235	Pro	Gly	Ser	Phe	e Gln 240
Gly	Leu	. Met	His	245	Gln	Lys	Leu	Trp	Met 250	Ile	Gln	Ser	Gln	11e 255
Gln	Val	Ile	e Glu	Arg 260	Asn	Ala	Phe	Asp	Asn 265	Leu	Gln	Ser	Leu	Val 270
Glu	Ile	Asn	Leu	Ala 275	His	Asn	Asn	Leu	Thr 280	Leu	Leu	Pro	His	Asp 285
				290					Arg 295					300
				305					Leu 310					315
				320					Ala 325					330
				335					Tyr 340					345
				350					Val 355					360
				365					Ala 370					375
				380			•		Ser 385					390
				395					Lys 400					405
				410					Asn 415					420
				425					Asn 430					Thr 435
				440					Ala . 445					Pro 450
				455					Glu ' 460					Ser 465
Gln .	Asp	Glu	Ala	Arg 470	Thr	Thr .	Asp	Asn	Asn ' 475	Val	Gly	Pro	Thr	Pro 480

Val '	Val	Asp	Trp	Glu 485	Thr	Thr	Asn	Val	Thr 490	Thr	Ser	Leu	Thr	Pro 495
Gln :	Ser	Thr	Arg	Ser 500	Thr	Glu	Lys	Thr	Phe 505	Thr	Ile	Pro	Val	Thr 510
Asp :	Ile	Asn	Ser	Gly 515	Ile	Pro	Gly	Ile	Asp 520	Glu	Val	Met	Lys	Thr 525
Thr :	Lys	Ile	Ile	Ile 530	Gly	Cys	Phe	Val	Ala 535	Ile	Thr	Leu	Met	Ala 540
Ala '	Val	Met	Leu	Val 545	Ile	Phe	Tyr	Lys	Met 550	Arg	Lys	Gln	His	His 555
Arg (	Gln	Asn	His	His 560	Ala	Pro	Thr	Arg	Thr 565	Val	Glu	Ile	Ile	Asn 570
Val 2	Asp	Asp	Glu	Ile 575	Thr	Gly	Asp	Thr	Pro 580	Met	Glu	Ser	His	Leu 585
Pro i	Met	Pro	Ala	Ile 590	Glu	His	Glu	His	Leu 595	Asn	His	Tyr	Asn	Ser 600
Tyr 1	Lys	Ser	Pro	Phe 605	Asn	His	Thr	Thr	Thr 610	Val	Asn	Thr	Ile	Asn 615
Ser :	Ile	His	Ser	Ser 620	Val	His	Glu	Pro	Leu 625	Leu	Ile	Arg	Met	Asn 630
Ser 1	Lys	Asp	Asn	Val 635	Gln	Glu	Thr	Gln	Ile 640					

<210> 502 <211> 2458

<212> DNA

<213> Homo Sapien

## <400> 502

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ageaaetgaa eggggaageg eeeggeteeg gggateggga tgteeeteet 200
cetteteete ttgetagttt eetaetatgt tggaaeettg gggaeteaea 250
ctgagateaa gagagtggea gaggaaaagg teaetttgee etgeeaeeat 300
caaetgggge tteeagaaaa agaeaetetg gatattgaat ggetgeteae 350
cgataatgaa gggaaeeaaa aagtggtgat eaettaetee agtegteatg 400
tetaeaataa ettgaetgag gaaeagaagg geegagtgge etttgettee 450
aattteetgg eaggagatge eteettgeag attgaaeete tgaageeeag 500
tgatgaggge eggtaeaeet gtaaggttaa gaatteaggg egetaeegtgt 550
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<210> 503

<211> 373

<212> PRT

<213> Homo Sapien

<400> 503

Met Ser Leu Leu Leu Leu Leu Leu Val Ser Tyr Tyr Val Gly 1 5 10

Thr Leu Gly Thr His Thr Glu Ile Lys Arg Val Ala Glu Glu Lys 20 25 30

Val Thr Leu Pro Cys His His Gln Leu Gly Leu Pro Glu Lys Asp 35 40 45

Thr Leu Asp Ile Glu Trp Leu Leu Thr Asp Asn Glu Gly Asn Gln 50 55 60

Lys Val Val Ile Thr Tyr Ser Ser Arg His Val Tyr Asn Asn Leu 65 70 75

Thr Glu Glu Gln Lys Gly Arg Val Ala Phe Ala Ser Asn Phe Leu 80 85 90

Ala Gly Asp Ala Ser Leu Gln Ile Glu Pro Leu Lys Pro Ser Asp 95 100 105

Glu Gly Arg Tyr Thr Cys Lys Val Lys Asn Ser Gly Arg Tyr Val 110 115 120

Trp Ser His Val Ile Leu Lys Val Leu Val Arg Pro Ser Lys Pro  $125 \\ 130 \\ 135$ 

Lys Cys Glu Leu Glu Gly Glu Leu Thr Glu Gly Ser Asp Leu Thr 140 145 150

Leu Gln Cys Glu Ser Ser Ser Gly Thr Glu Pro Ile Val Tyr Tyr
155 160 165

Trp Gln Arg Ile Arg Glu Lys Glu Gly Glu Asp Glu Arg Leu Pro 170 175 180

Pro Lys Ser Arg Ile Asp Tyr Asn His Pro Gly Arg Val Leu Leu 185 190 195

Gln Asn Leu Thr Met Ser Tyr Ser Gly Leu Tyr Gln Cys Thr Ala  $200 \hspace{1cm} 205 \hspace{1cm} 210 \hspace{1cm}$ 

Gly Asn Glu Ala Gly Lys Glu Ser Cys Val Val Arg Val Thr Val  $215 \\ 220 \\ 225$ 

Gln	Tyr	Val	Gln	Ser 230	Ile	Gly	Met	Val	Ala 235	Gly	Ala	Val	Thr	Gly 240
Ile	Val	Ala	Gly	Ala 245	Leu	Leu	Ile	Phe	Leu 250	Leu	Val	Trp	Leu	Leu 255
Ile	Arg	Arg	Lys	Asp 260	Lys	Glu	Arg	Tyr	Glu 265	Glu	Glu	Glu	Arg	Pro 270
Asn	Glu	Ile	Arg	Glu 275	Asp	Ala	Glu	Ala	Pro 280	Lys	Ala	Arg	Leu	Val 285
Lys	Pro	Ser	Ser	Ser 290	Ser	Ser	Gly	Ser	Arg 295	Ser	Ser	Arg	Ser	Gly 300
Ser	Ser	Ser	Thr	Arg 305	Ser	Thr	Ala	Asn	Ser 310	Ala	Ser	Arg	Ser	Gln 315
Arg	Thr	Leu	Ser	Thr 320	Asp	Ala	Ala	Pro	Gln 325	Pro	Gly	Leu	Ala	Thr 330
Gln	Ala	Tyr	Ser	Leu 335	Val	Gly	Pro	Glu	Val 340	Arg	Gly	Ser	Glu	Pro 345
Lys	Lys	Val	His	His 350	Ala	Asn	Leu	Thr	Lys 355	Ala	Glu	Thr	Thr	Pro 360
Ser	Met	Ile	Pro	Ser 365	Gln	Ser	Arg	Ala	Phe 370	Gln	Thr	Val		

<210> 504 <211> 3060

<212> DNA

<213> Homo Sapien

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<210> 505 <211> 352

<212> PRT

<213> Homo Sapien

<400> 505

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Lys Ala Lys Gly Glu Thr Ala Tyr Leu Pro Cys Lys Phe Thr Leu  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Ser Pro Glu Asp Gln Gly Pro Leu Asp Ile Glu Trp Leu Ile Ser 50 55 60

Pro Ala Asp Asn Gln Lys Val Asp Gln Val Ile Ile Leu Tyr Ser 65 70 75

Gly Asp Lys Ile Tyr Asp Asp Tyr Tyr Pro Asp Leu Lys Gly Arg 80 85 90

Val His Phe Thr Ser Asn Asp Leu Lys Ser Gly Asp Ala Ser Ile  $95\,$  100 105

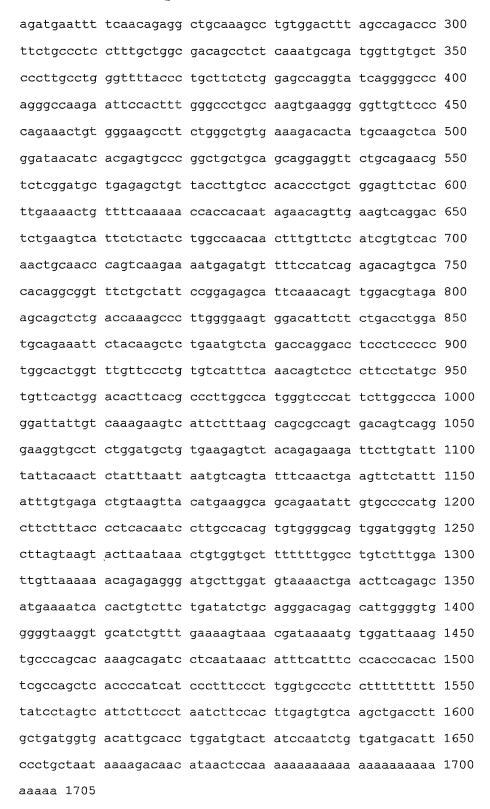
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Ser	Glu	Glu	Ile	Gly 155	Ser	Asp	Phe	Lys	Ile 160	Lys	Cys	Glu	Pro	Lys 165
Glu	Gly	Ser	Leu	Pro 170	Leu	Gln	Tyr	Glu	Trp 175	Gln	Lys	Leu	Ser	Asp 180
Ser	Gln	Lys	Met	Pro 185	Thr	Ser	Trp	Leu	Ala 190	Glu	Met	Thr	Ser	Ser 195
Val	Ile	Ser	Val	Lys 200	Asn	Ala	Ser	Ser	Glu 205	Tyr	Ser	Gly	Thr	Tyr 210
Ser	Cys	Thr	Val	Arg 215	Asn	Arg	Val	Gly	Ser 220	Asp	Gln	Cys	Leu	Leu 225
Arg	Leu	Asn	Val	Val 230	Pro	Pro	Ser	Asn	Lys 235	Ala	Gly	Leu	Ile	Ala 240
Gly	Ala	Ile	Ile	Gly 245	Thr	Leu	Leu	Ala	Leu 250	Ala	Leu	Ile	Gly	Leu 255
Ile	Ile	Phe	Cys	Cys 260	Arg	Lys	Lys	Arg	Arg 265	Glu	Glu	Lys	Tyr	Glu 270
Lys	Glu	Val	His	His 275	Asp	Ile	Arg	Glu	Asp 280	Val	Pro	Pro	Pro	Lys 285
Ser	Arg	Thr	Ser	Thr 290	Ala	Arg	Ser	Tyr	Ile 295	Gly	Ser	Asn	His	Ser 300
Ser	Leu	Gly	Ser	Met 305	Ser	Pro	Ser	Asn	Met 310	Glu	Gly	Tyr	Ser	Lys 315
Thr	Gln	Tyr	Asn	Gln 320	Val	Pro	Ser	Glu	Asp 325	Phe	Glu	Arg	Thr	Pro 330
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<210> 506														
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101 ns	T 3 7 7 7													

<212> DNA

<213> Homo Sapien

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<210> 507

<211> 206

<212> PRT

## <213> Homo Sapien

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- <210> 508
- <211> 924
- <212> DNA
- <213> Homo Sapien

200

<400> 508

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teaaggatea teaggageea aaceceaaaa tettgagaaa aateageage 350 attgeeaact ettteeteta eatgeagaaa actetgegge aatgteagga 400 acagaggeag tgteactgea ggeaggaage eaceaatgee aceagagtea 450 teeatgacaa etatgateag etggaggtee aegetgetge eattaaatee 500 etgggagage tegaegtet tetageetgg attaataaga ateatgaagt 550 aatgteeta gettgatgae aaggaacetg tatagtgate eagggatgaa 600 eaceeeetg geggtttaet gtgggagaea geeeaeettg aaggggaagg 650 agatgggaa ggeeeettge agetgaaagt eceaeetgget ggeeteagge 700 tgtettatte egettgaaaa taggeaaaaa gtetaetgg gtattgtaa 750 taaaetetat etgetgaaag ggeetgeagg eeateetggg agtaaaggge 800 tgeetteeea tetaatttat tgtaaagtea tatagteeat gtetgtgatg 850 tgageeaagt gatateetgt agtacacatt gtaetgagtg gtitteetga 900 ataaatteea tatttaeet atga 924

<210> 509

<211> 177

<212> PRT

<213> Homo Sapien

<400> 509

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Ile Leu Cys Ser Val Asp Asn His Gly Leu Arg Arg Cys Leu Ile  $20 \hspace{1.5cm} 25 \hspace{1.5cm} 30$ 

Ser Thr Asp Met His His Ile Glu Glu Ser Phe Gln Glu Ile Lys 35 40 45

Arg Ala Ile Gln Ala Lys Asp Thr Phe Pro Asn Val Thr Ile Leu
50 55 60

Ser Thr Leu Glu Thr Leu Gln Ile Ile Lys Pro Leu Asp Val Cys
75

Cys Val Thr Lys Asn Leu Leu Ala Phe Tyr Val Asp Arg Val Phe 80 85 90

Lys Asp His Gln Glu Pro Asn Pro Lys Ile Leu Arg Lys Ile Ser 95 100

Ser Ile Ala Asn Ser Phe Leu Tyr Met Gln Lys Thr Leu Arg Gln 110 115 120

Cys Gln Glu Gln Arg Gln Cys His Cys Arg Gln Glu Ala Thr Asn 125 130 135

Ala Ala Ile Lys Ser Leu Gly Glu Leu Asp Val Phe Leu Ala

155 160 165

Trp Ile Asn Lys Asn His Glu Val Met Phe Ser Ala 170 175

<210> 510

<211> 996

<212> DNA

<213> Homo Sapien

<400> 510

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<210> 511

<211> 251

<212> PRT

<213> Homo Sapien

<400> 511

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Val Cys Ser Met Ser Val Leu Arg Ala Tyr Pro Asn Ala Ser Pro 20 25 30

Leu Leu Gly Ser Ser Trp Gly Gly Leu Ile His Leu Tyr Thr Ala Thr Ala Arg Asn Ser Tyr His Leu Gln Ile His Lys Asn Gly His Val Asp Gly Ala Pro His Gln Thr Ile Tyr Ser Ala Leu Met Ile Arg Ser Glu Asp Ala Gly Phe Val Val Ile Thr Gly Val Met Ser Arg Arg Tyr Leu Cys Met Asp Phe Arg Gly Asn Ile Phe Gly Ser 95 His Tyr Phe Asp Pro Glu Asn Cys Arg Phe Gln His Gln Thr Leu 110 Glu Asn Gly Tyr Asp Val Tyr His Ser Pro Gln Tyr His Phe Leu 130 Val Ser Leu Gly Arg Ala Lys Arg Ala Phe Leu Pro Gly Met Asn Pro Pro Pro Tyr Ser Gln Phe Leu Ser Arg Arg Asn Glu Ile Pro 160 Leu Ile His Phe Asn Thr Pro Ile Pro Arg Arg His Thr Arg Ser 175 Ala Glu Asp Asp Ser Glu Arg Asp Pro Leu Asn Val Leu Lys Pro Arg Ala Arg Met Thr Pro Ala Pro Ala Ser Cys Ser Gln Glu Leu 200 Pro Ser Ala Glu Asp Asn Ser Pro Met Ala Ser Asp Pro Leu Gly 220 Val Val Arg Gly Gly Arg Val Asn Thr His Ala Gly Gly Thr Gly 230 235 Pro Glu Gly Cys Arg Pro Phe Ala Lys Phe Ile

<210> 512

<211> 2015

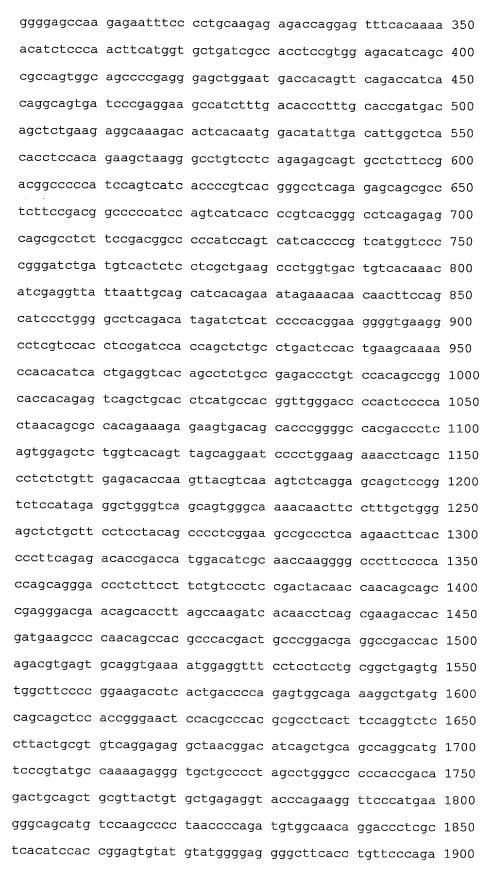
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<213> Homo Sapien

245

<400> 512

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ctgctgggag gttggggtct ctgggagctc tgcaggcccc agcacccgca 150
gagcagacac tgcgatgaca acggacgaca cagaagtgcc cgctatgact 200
ctagcaccgg gcccaccccc tctggaaact caaacgctga gcgctgagac 250
ctcttctagg gcctcaaccc cagccggccc cattccagaa gcagagacca 300



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<210> 513

<211> 482

<212> PRT

<213> Homo Sapien

<400> 513

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20 25 30

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35 40

Met Thr Leu Ala Pro Gly His Ala Ala Leu Glu Thr Gln Thr Leu
50 55 60

Ser Ala Glu Thr Ser Ser Arg Ala Ser Thr Pro Ala Gly Pro Ile 65 70 75

Pro Glu Ala Glu Thr Arg Gly Ala Lys Arg Ile Ser Pro Ala Arg 80 85 90

Glu Thr Arg Ser Phe Thr Lys Thr Ser Pro Asn Phe Met Val Leu 95 100 105

Ile Ala Thr Ser Val Glu Thr Ser Ala Ala Ser Gly Ser Pro Glu 110 115 120

Gly Ala Gly Met Thr Thr Val Gln Thr Ile Thr Gly Ser Asp Pro 125 130 135

Glu Glu Ala Ile Phe Asp Thr Leu Cys Thr Asp Asp Ser Ser Glu 140 145 150

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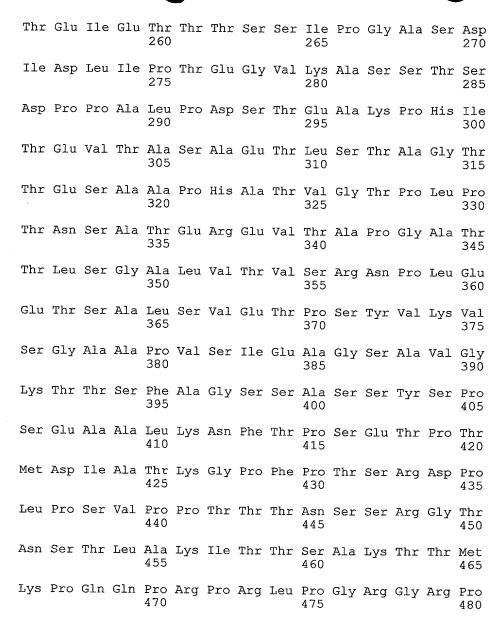
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Ser Ala Ser Ser Asp Gly Pro His Pro Val Ile Thr Pro Ser Arg 200 205 210

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Gln Thr

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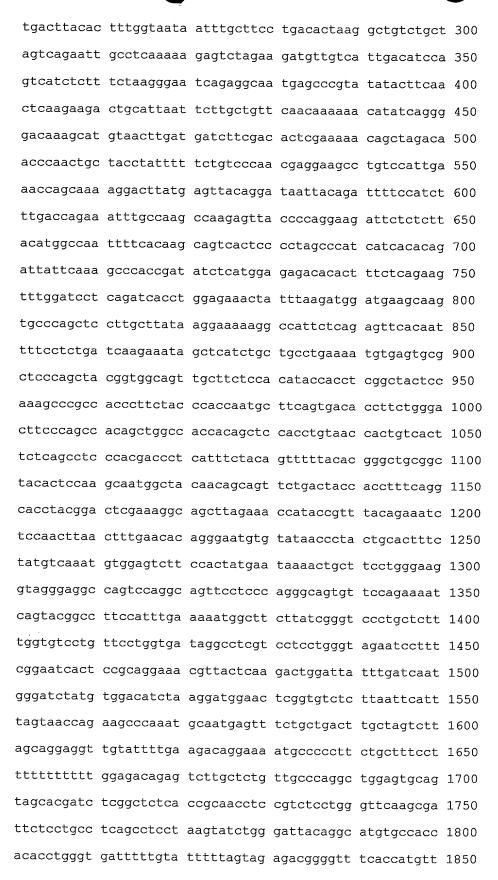
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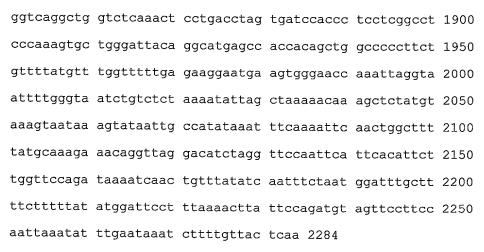
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<213> Homo Sapien

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<210> 515

<211> 431

<212> PRT

<213> Homo Sapien

<400> 515

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Ile Cys Phe Leu Thr Leu Arg Leu Ser Ala Ser Gln Asn Cys Leu 20 25 30

Lys Lys Ser Leu Glu Asp Val Val Ile Asp Ile Gln Ser Ser Leu 35 40 45

Ser Lys Gly Ile Arg Gly Asn Glu Pro Val Tyr Thr Ser Thr Gln
50 55 60

Glu Asp Cys Ile Asn Ser Cys Cys Ser Thr Lys Asn Ile Ser Gly
65 70 75

Asp Lys Ala Cys Asn Leu Met Ile Phe Asp Thr Arg Lys Thr Ala 80 85 90

Arg Gln Pro Asn Cys Tyr Leu Phe Phe Cys Pro Asn Glu Glu Ala 95 100

Cys Pro Leu Lys Pro Ala Lys Gly Leu Met Ser Tyr Arg Ile Ile 110 115 120

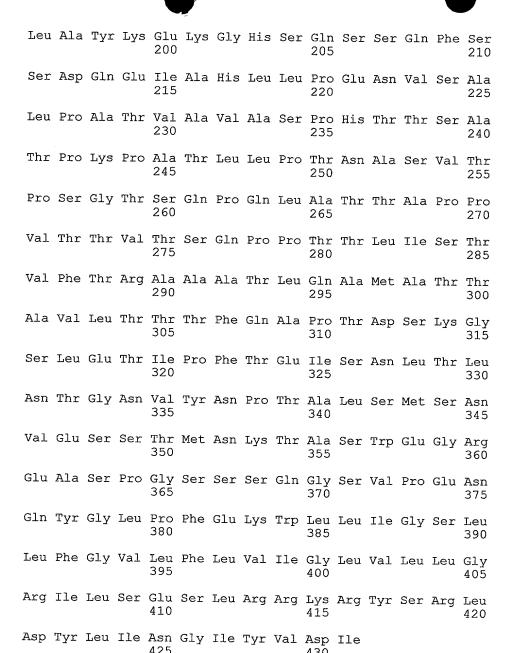
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Pro Gln Glu Asp Ser Leu Leu His Gly Gln Phe Ser Gln Ala Val 140 145 150

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<211> 2749

<212> DNA

<213> Homo Sapien

<220>

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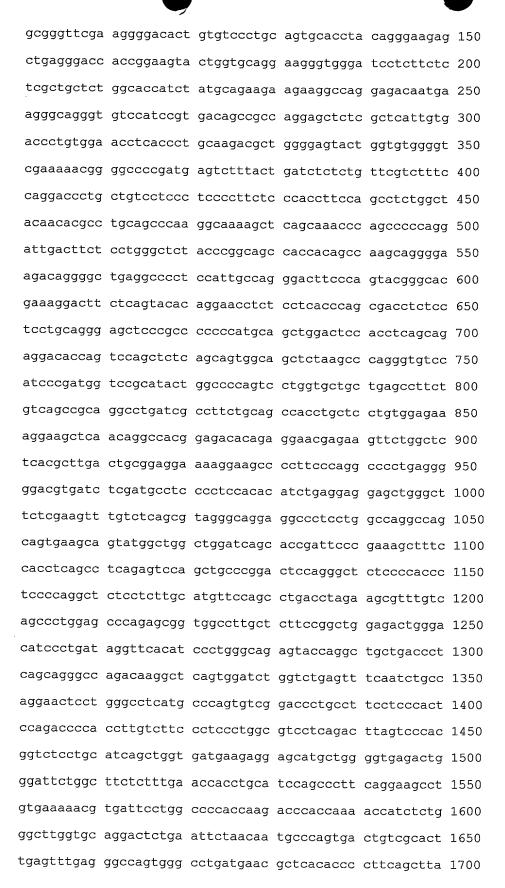
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<211> 332

<212> PRT

<213> Homo Sapien

<400> 517

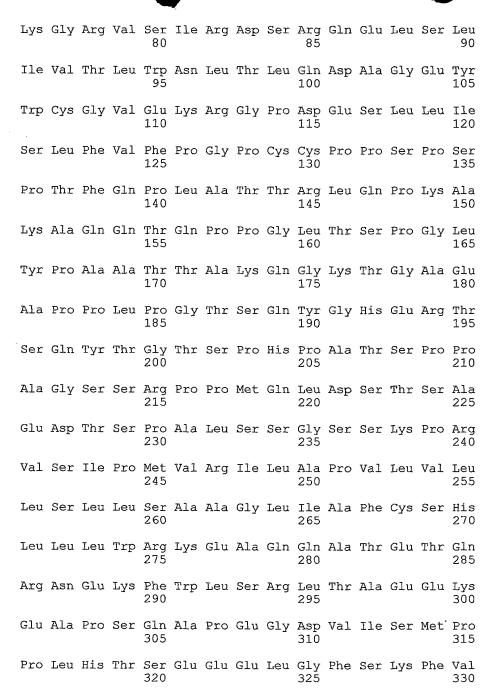
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20 25 30

Asp Thr Val Ser Leu Gln Cys Thr Tyr Arg Glu Glu Leu Arg Asp 35 40 45

His Arg Lys Tyr Trp Cys Arg Lys Gly Gly Ile Leu Phe Ser Arg 50 55 60

Cys Ser Gly Thr Ile Tyr Ala Glu Glu Glu Gly Gln Glu Thr Met
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Ser Ala

<210> 518

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 518

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